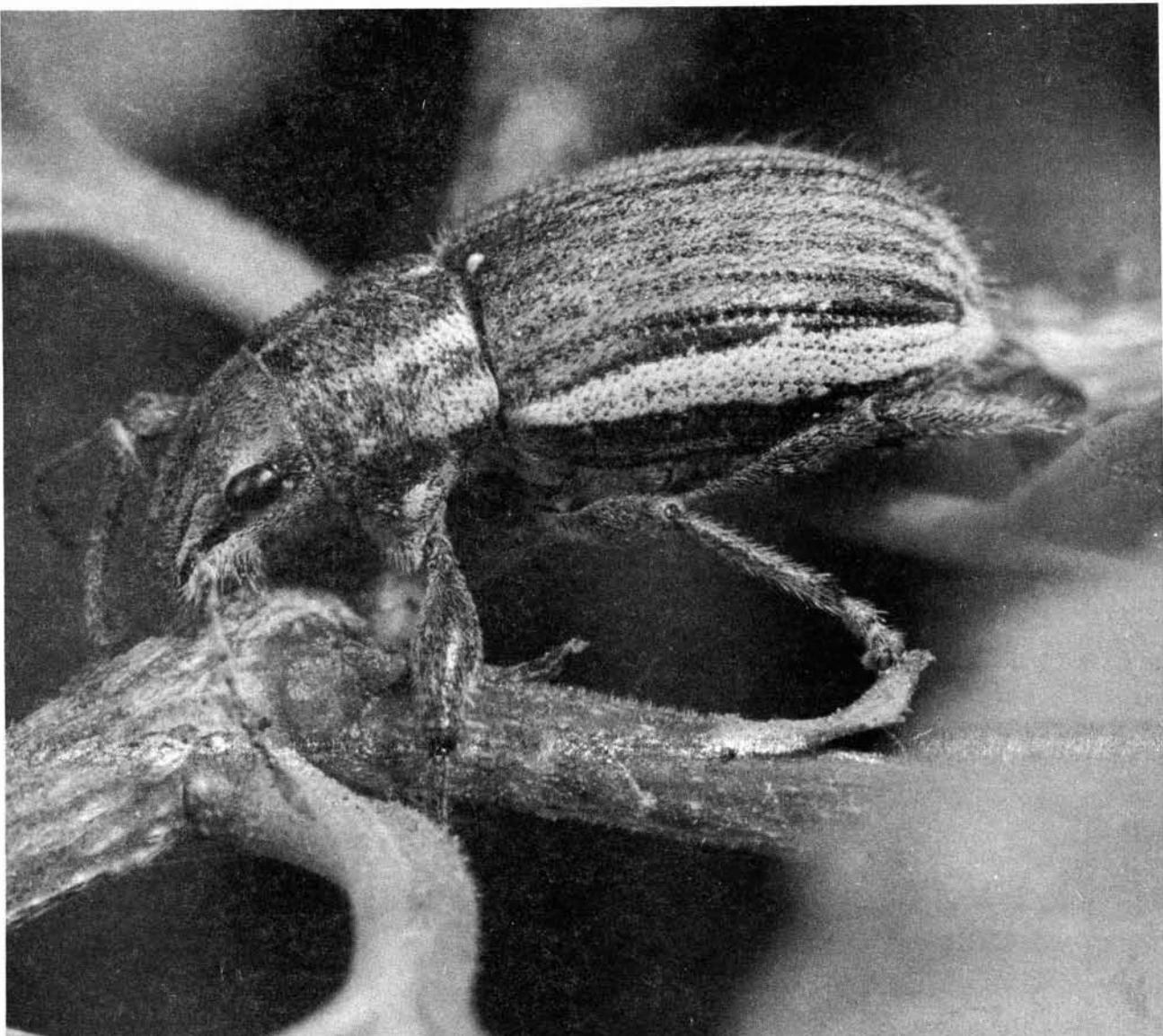




CALIFORNIA PLANT PEST and DISEASE REPORT

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Whitefringed beetle, *Graphognathus leucoloma*, collected in San Bernardino County. Photo by Jim Heath.

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California Plant Pest and Disease Report

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Entomological Highlights

NAME CHANGES

PEPPER TREE PSYLLID--Formerly known as *Calophya schini* Tuthill, this psyllid pest is now being called *Calophya rubra* (Blanchard). The synonymy change was done by Daniel Burckhardt, 1988, in the Zoological Journal of the Linnaean Society 92:115-191. Also synonymized under *C. rubra* is *Trioza gallifex* Kieffer & Jorge. However, there is apparently a species complex involved, which is further complicated by the fact that strains of *Calophya* are known to attack or not attack the Brazilian pepper tree, *Schinus terebinthifolia*, and *Schinus montanus* in South America. The strain in California so far has been found only on *S. molle*. Dr. David Hollis, currently at the British Museum of Natural History in London, has asked to see California material and will try to solve some of the problems surrounding this species complex. In the meantime, the name *Calophya rubra* will be used for the pepper tree psyllid as we know it in California.

SIGNIFICANT FINDS

MEDITERRANEAN FRUIT FLY, *Ceratitis capitata* -(A)- Starting in July, a number of Medfly finds have been made in Los Angeles County, prompting an aerial pesticide spray and a sterile fly release program in the original infested area. Adult wild flies along with larval sites are still being found in the county at the time of this writing. The more recent larval collection sites and associated adults are outside of the originally infested areas. The following reports by John Pozzi outline the finds since July:

Two female Mediterranean fruit flies were trapped about 0.75 mile apart in the Northridge area of Los Angeles County on July 20, 1988. Both flies were detected in Jackson/trimedlure traps that were placed in peach trees. One Medfly was found at a residence on Amestoy Avenue and the other at a property on Napa Street. Los Angeles County trapper Greg Abile is credited with finding both flies.

Two Mediterranean fruit flies (Medfly) were trapped on July 25, 1988 , in the Northridge and Reseda areas of Los Angeles County. The Medfly in Northridge was found in a Jackson/trimedlure trap placed in peach tree on Melvin Avenue and was an unmated female containing mature eggs. The Reseda fly was detected about two miles southeast in a Jackson/trimedlure trap placed in an apple tree.

Both Medfly finds are about 2.5 miles from two Medflies trapped on July 20 in Northridge.

Los Angeles County Department of Agriculture trappers Oscar Orta and Valerie Mortensen are credited with finding the Medflies.

CDFA applied an aerial malathion/bait spray July 25, 1988, in a 16 square mile area around the first two Northridge Medfly finds. The Reseda find is just inside the aerial malathion/bait spray boundary while the Northridge Medfly site is about one mile

outside.

CDFA has released sterile Medflies in a 3.5 mile radius around the finds.

A single, unmated sexually mature female Medfly, with well-developed eggs, was recovered July 20, 1988, from a Jackson trap in a peach tree located on Amestoy Avenue, Northridge, California (Los Angeles County).

Also recovered in July 20 was a single, unmated, female Medfly, not quite mature with partially developed eggs, from a Jackson trap in a peach tree located on Napa Street, Northridge, California (Los Angeles County).

Additional traps were deployed July 21. Approximately 100 traps are being deployed in the center square mile. Total complement of traps will number approximately 1500.

The California Department of Food and Agriculture had scheduled at least one aerial malathion/bait spray for July 25, 1988, in a 16-square-mile area around both Medfly find sites. Sterile Medflies were released in a 3.5-mile radius around the finds.

Two Medflies were trapped July 30 and 31 in the Reseda area of Los Angeles County. Both Medflies were found at the same Jackson/trimedlure trap site along Darby Place. The trap was placed in an orange tree.

The find site is within a few blocks of a Medfly trapped earlier on Baird Avenue and is inside the aerial spray zone.

Los Angeles County Department of Agriculture trappers, George Radai and Ken Grant, are credited with finding the Medflies, both of which were sexually immature.

A sexually mature male Medfly was trapped September 26, 1988, in Los Angeles. The Medfly was found in a Jackson/trimedlure trap placed in a guava along Canfield Avenue.

The find site is approximately 15 miles southeast from the Medflies trapped earlier in the Northridge and Reseda areas of Los Angeles.

Los Angeles Country Department of Agriculture trapper Lisa Koller is credited with finding the Medfly.

Sixteen more Medflies were trapped between October 3 and 5, 1988, in the Palms/Culver City area of Los Angeles. Four of the flies were found at two new locations and the remainder of the flies at locations Medflies had been previously trapped.

Four Medflies were found at new locations. Two sexually mature males were found on October 5 in a Jackson/trimedlure trap located in an avocado tree on Manning Avenue. One sexually immature male and one mated female with eggs were found on October 5 in a McPhail trap in a lemon tree on Gibson Street.

Twelve flies were trapped in areas of previous finds. Six sexually mature males were found on October 3 and 4 in a Jackson/trimedlure trap placed in a fig tree on Cadillac Avenue. Three unmated females, one sexually mature male, and one sexually immature male were found on the same dates in a McPhail trap in a kumquat tree at Alvira Street. On October 4, one sexually mature male was found in a Jackson/trimedlure trap placed in a lemon tree at McConnell Drive.

Los Angeles County Department of Agriculture trappers Steve Bennett, James Hartmann, Armando Quinones and R. Smith are credited with finding the Medflies.

On October 3, CDFA Associate Economic Entomologist Juan Mercogliano found 15 third instar Medfly larvae in a grapefruit at a residence on Durango Avenue where Medfly larvae were found earlier.

Since September 30, 1988, 47 Medflies have been trapped on ten properties in the Palms/Culver City area of Los Angeles. Medfly larvae were found on one of these sites. The finds are within two miles of one another rather than one-half mile as previously reported.

As an aside, it may be of interest to some of our readers outside the Departments that CDFA deploys large numbers of traps in an effort to locate and eradicate incipient infestations of exotic agricultural pests. Trappers are trained intensively to insure the continued success of the trapping program. In addition, a quality control (QC) program has been implemented to monitor the performance of the trappers in the field. One aspect of this program involves the placing of dead, marked specimens of target exotic species in various traps along a trap line. In this way, the trapper is spot-checked to insure full training, both in the recognition of the target species and the proper procedures for servicing the traps.

The following bit of prose (call it poetry if you will) was written about a trapping experience involving a QC medfly plant in a trap in Napa County. The piece, written by trapper M. Godfrey, reveals that "running a trap line" can tend to produce humorous, frustrating or otherwise unique experiences. We think the poem is a priceless gem, and we wish to congratulate Godfrey for perseverance and a job well done in spite of terrific odds. References are made in the poem to Martin Lubinski and Neil Wright, who are State area detection and trapping managers.

The Dog Days of Trapping

Trapper find "planted" Medfly
Goes to next trap before office
Trapper carry beloved pole and AM [apple maggot] trap
Trapper return to truck with open door
Old golden lab hop in
Golden lab won't leave
Trapper try friendly voice
Trapper try Command voice
Lab still not leave
Trapper get idea

Go to other door and open
Golden lab finally leave
Trapper pick up trap supplies in dirt
Golden lab smart puppy
Hop in other door before Trapper can close
Trapper get [mad]
Even though dog cute
Finally get dog out of truck
Trapper rearrange
Footprints everywhere
Trapper look for special trap
Trap hanger still there
Trap body still there
Trap insert not there
Trapper rummage through truck
belongings
No trace of insert
Trapper laugh
Lubinski never believe this
Neil smirk too
C'est la vie say the trapper
Trapper start engine
Trapper see dog
Trapper see insert on belly of dog
Dog not so cute
Trapper get insert
Insert lose most of Medfly
but full of hair
Trapper save partial wing for sample
Dog ran home
Owner have to get baited wick and holder
Owner have to cut from tangled tail
C'est la vie say the old Trapper

ORIENTAL FRUIT FLY, *Dacus dorsalis* -(A)- Oriental fruit flies have been found in various locations through the end of October. The following report by John Pozzi outlines the finds:

A sexually mature male Oriental fruit fly (OFF) was trapped April 26, 1988, in Garden Grove, Orange County. It was found in a Jackson/methyl eugenol trap placed in a loquat tree on Cypress Street. Orange County Department of Agriculture Technician Karen Zakowicz is credited with finding the OFF.

Two sexually mature male Oriental fruit flies were trapped on July 1 and 2, 1988, in

Lincoln Heights, Los Angeles County.

The first fly was found by Los Angeles County trapper Suzanne Moulton in a Jackson/methyl eugenol trap that was placed along Mercury Avenue. Los Angeles County trappers Larry Nolan and Ken Grant found the second OFF the next day in a Jackson/methyl eugenol trap approximately one mile south on Hancock Street. Both traps were placed in loquat trees.

CDFA Pest Detection/Emergency Projects personnel immediately began male annihilation treatments on July 5 in a 1.5 mile radius area around the finds.

San Diego County Department of Agriculture Technician Bruce Gardner found a sexually mature female Oriental fruit fly in a McPhail trap in Santee on July 15, 1988. The trap was placed in a lemon tree along Rhone Road.

McPhail trap density in the find area was five traps per square mile. In response, the San Diego County Department of Agriculture has increased Jackson/methyl eugenol and McPhail trap densities to 25 traps per square mile in the core square mile. Jackson/methyl eugenol trap density in an 80-square-mile area around the core square mile is five traps per square mile.

A male Oriental fruit fly was trapped August 11, 1988, in Culver City, Los Angeles County. The fly was found by Los Angeles County trapper Naime Serrana in a Jackson/methyl eugenol trap placed in a peach tree on Higuera Street.

MEXICAN FRUIT FLY, *Anastrepha ludens* -(A)- These reports by John Pozzi outline the Mexican fruit fly finds through October:

A male Mexican fruit fly was trapped August 26, 1988, near the California/Mexico border in San Ysidro, San Diego County. It did not have dye and the condition of the testes indicated a wild fly. The fly was found in a McPhail trap placed in a grapefruit tree on San Ysidro Boulevard. San Diego County Department of Agriculture Pest Detection Technician James Baldas is credited with finding the Mexican fruit fly. A sterile female Mexican fruit fly was also found in the same trap.

The flies were found in an area that the McPhail trap density is maintained throughout the year at 25 traps per square mile because of the potential threat of Mexican fruit fly being introduced into California.

A female Mexican fruit fly was trapped April 20, 1988, in San Marcos, San Diego County. The fly was immature, unmated, and contained no fully developed eggs.

San Diego County Agricultural Aide William Stephans found the Mexican fruit fly in a McPhail trap placed in a grapefruit tree on Robinhood Road.

A female Mexican fruit fly was trapped in Paso Robles, San Luis Obispo County, on

August 16, 1988. The fly had slight ovarian development and was unmated. San Luis Obispo County Department of Agriculture Pest Detection Specialist Jennifer Welch found the fruit fly while servicing a McPhail trap placed in a plum tree on Sylvia Circle.

This is the first time a Mexican fruit fly has been trapped in San Luis Obispo County.

GYPSY MOTH, *Lymantria dispar* -(A)- Specimens of this serious pest have been trapped in the following locations this summer:

<u>County:</u>	<u>City:</u>	<u>Date of find:</u>	<u>Collector:</u>
SBA	Santa Barbara	06/20/88	Taylor
LAX	Los Angeles	06/29/88	LaPreziosa
SBA	Lompoc	07/01/88	Wards
SBA	Montecito	07/08/88	Clavero
LAX	Los Angeles	07/18/88	Miofsky/Sium
SDG	Escondido	07/18/88	Avery
SDG	Del Mar	07/21/88	Brandon
SDG	Spring Valley	07/27/88	Murillo
ORA	Anaheim	08/04/88	Glickman
LAX	Santa Monica	08/08/88	Talle
LAX	Northridge	08/10/88	Hansen
SDG	San Diego	08/26/88	Brandon
SMT	Portola Valley	09/15/88	Eaton

NEW STATE RECORDS

WHITEFRINGED BEETLE, *Graphognathus leucoloma* -(A)- After a homeowner submitted some of these weevils to the San Bernardino Agricultural Commissioner's office, it was discovered that a major infestation now occurs in the Chino Hills. Well over a thousand individuals have been collected from this site. The following reports by John Pozzi outline the original finds and the results of a delimitation survey:

This serious weevil pest was positively identified on August 8, 1988, at Chino Hills, San Bernardino County. This is the first time whitefringed beetle has been detected in California.

A homeowner collected the beetles from his lawn and took them to the San Bernardino County Agricultural Commissioner's office for identification. They were tentatively identified as *Graphognathus* spp. and final confirmation was made by CDFA Insect Biosystematist Terry N. Seeno.

In response to the find, CDFA and San Bernardino County Department of Agriculture

have initiated a delimiting survey for whitefringed beetle around the Chino Hills find. As a result of the survey, whitefringed beetle has been found infesting an approximate one square mile area around the initial find on Ilex Drive.

CDFA applied at least one foliar application of carbaryl from ground rigs on all infested properties. Treatment began on August 16.

The whitefringed beetle is native to Argentina, Brazil, Chile, and Uruguay. It has also been found in the southern United States.

The whitefringed beetle seriously damages field and garden crops and ornamental plants. It has been observed to feed on 385 species of plants. Some of the common host plants are alfalfa, blackberry, cotton, dahlia, lima bean, okra, ragweed, soybean, and strawberry.

A single specimen was also collected from Sonoma County in a Japanese beetle trap. The collection was made by Bonnie Sallee from a trap in a turf area on Eastin Dr. in Sonoma on September 28. It is not known at this point whether an infestation occurs near by or if this constitutes a single carry in specimen.

RUSSIAN WHEAT APHID, *Diuraphis noxia* -(Q)- Previous issues of CPPDR have included information on the first United States record of this aphid as well as information on its biology, economic importance and its movement westward toward California. [See CPPDR 5(1):206, 5(5):268, 6(1):12 and 6(3):38.] It has now been found in California. The following report by John Pozzi outlines the find:

The aphid was found in Calexico, Imperial County on March 30, 1988, by a local farmer who spotted it in his wheat plantings. He took a sample to the Imperial County Department of Agriculture and it was preliminarily identified as Russian wheat aphid. Final confirmation was made by CDFA Insect Biosystematist John Sorenson.

Russian wheat aphid was first detected in the panhandle region of Texas in March, 1986. It has spread to Arizona, Colorado, Idaho, Kansas, Oklahoma, Oregon, Montana, Nebraska, New Mexico, South Dakota, Texas, Utah, Washington, and Wyoming.

A USDA-sponsored meeting was recently held in Denver, Colorado, to discuss the Russian wheat aphid situation. Participants included representatives of departments of agriculture and cooperating agencies from the western United States. The group recommended that emphasis be placed on implementation of a multistate biological control program for suppression of aphid populations.

Russian wheat aphid is common and damaging to wheat, barley, and triticale, and less so on rye and oats. Several non-crop grasses are known to be alternate hosts for Russian wheat aphid populations in the United States, including various wheatgrasses (crested, bluebunch, intermediate, and western), Plains bluegrass, squirreltail, cheatgrass, Arizona fescue redondo, spike muhly, blue grama, salina wildrye, green needle, alkali, canary, and Johnson grasses. Corn and sorghum apparently are not infested.

Colorado State University Extension Entomologist Frank B. Peairs reports that damage by Russian wheat aphid first appears as circular areas or strips on stunted, discolored plants. Aphid colonies appear within tightly curled leaves, which have long, white streaks.

Under some conditions, infested wheat tillers will have a purplish color. Heavily infested plants will appear prostrate or flattened. After heading, some heads will have a twisted or distorted appearance (heads often have a 'fish hook' shape) because the head is trapped by the tightly curled flag leaf. At this state, most aphids are feeding on the stem within the flag leaf sheath. This results in blank grains and in some cases killing of the entire head.

The March 30 collection from Imperial County has so far been the only officially confirmed collection in the state. However, on May 27, a single alate specimen was reported taken from a suction trap sample of field plots at the University of California, Davis, Experiment Station. The specimen was identified by Dr. Pike at Washington State University. The specimen has not been examined by CDFA Aphidologists.

ASH WHITEFLY, *Siphoninus phillyrea* -(Q)- Also known as the pomegranate whitefly, this species was found heavily infesting ash trees in the San Fernando Valley area of Los Angeles County. This find constitutes a new California and North American record. The following report outlines the finds and discusses the economic importance and the recognition characteristics of this new pest.

The original collection of ash whitefly was made by Rob Orsburn of Los Angeles County on July 18. Since that time, collections have been made in several other locations in and around the San Fernando Valley, in the Hollywood Hills including Hollywood, and as far south as Sunset Crest Drive in Los Angeles. Los Angeles County Entomologist Rosser Garrison recognized the original find as something unique and sent it to Sacramento for identification. A more recent collection was made at Anaheim, Orange County by L. Blair. The specimens were collected October 10 from ash trees.

This whitefly is a Palearctic species. Its current known range is Ireland, England, France, Spain, Austria, Germany, Switzerland, Czechoslovakia, Hungary, Romania, Poland, Yugoslavia, Italy, Corsica, Cyprus, Syria, Iran, Saudi Arabia, Egypt, Morocco, Libya, Cameroon, Ethiopia, Sudan and India. It was first described in Ireland in 1835. Populations have persisted in the colder regions of Europe for many years, indicating that this species will do well in most areas of California, even the colder locations.

It is a polyphagous species. In California it has also been found on pomegranate (*Punica granatum*) and *Pyrus* spp.; other hosts are suspected but unconfirmed thus far. The following lists the world hosts:

Leguminosae:	<i>Afzelia</i> sp.
Oleaceae:	<i>Fraxinus excelsior</i> <i>Fraxinus ornus</i> <i>Fraxinus syriaca</i> <i>Olea chrysophylla</i> <i>Olea europaea</i> <i>Phillyrea latifolia</i> <i>Phillyrea media</i>
Punicaciae:	<i>Punica granatum</i>

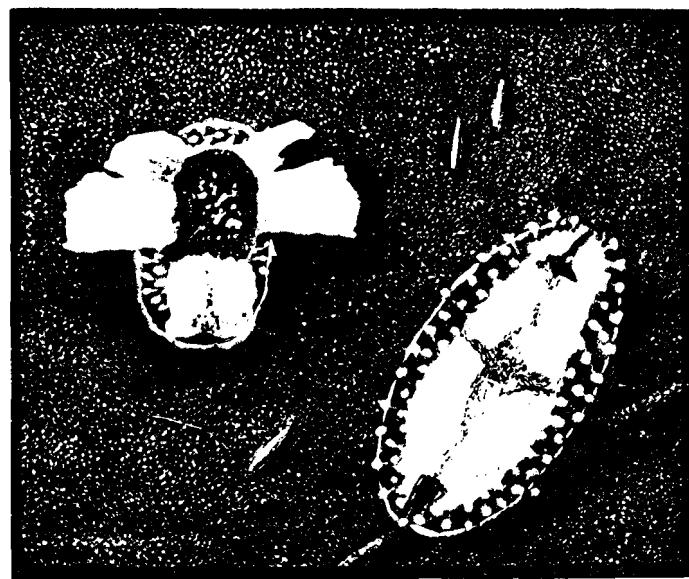
Rhamnaceae:	<i>Rhamnus alaternus</i>
	<i>Zizyphus spina-christi</i>
Rosaceae:	<i>Crataegus mollis</i>
	<i>Crataegus oxyacantha</i>
	<i>Crataegus monogyna</i>
	<i>Cydonia oblonga</i>
	<i>Mespilus</i> sp.
	<i>Prunus persica</i>
	<i>Pyrus calleryana</i> (Calif.)
	<i>Pyrus communis</i>
	<i>Pyrus malus</i>
	<i>Pyrus sativa</i>

The whitefly is apparently common throughout its range, although natural enemies keep it under economic control in most circumstances. In severe attacks, the species is known to cause downward rolling of the leaves, yellow discoloration and premature leave drop. Severe symptoms are occurring in the infested area in Los Angeles County. Sooty mold and honeydew are also common problems as with other whiteflies. Natural enemies have not been found so far in the California infestations. There are thought to be two to three generations per year.

The species is unique in appearance in the pupal stage. The dorsal surface has 40-50 long dorsal siphon tubes similar to the cornicles found on aphids. These tubular structures produce a droplet of glassy wax, which causes the whole structure to appear as a glass club. The 40-50 small glass clubs give the pupa a rather unusual, flocked appearance. In the middle of the body, there are tufts of pure white, asbestos-like fibrous wax at both the anterior and posterior ends of the pupa. These tuft often meet in the center of the body and usually obscure the siphon tubes in the central area of the body.

Slide mounted pupae are distinctive in possessing the siphunculae (siphon tubes) and a mid-dorsal dark stripe which fades out in the middle of the body. Adults are not particularly distinctive, except that in slide mounted specimens the males have a single posteriorly directed tooth on the clasper.

The common name ash whitefly is provisionally used here since no other common name has been found in the literature except pomegranate whitefly. The common name pomegranate whitefly has been used in the literature for the species *Siphoninum granati* Priesner and Hosny, 1932, but this species has



Photograph taken from "Contributions to a knowledge of the Whiteflies," Priesner and Hosny, 1932, page 9.

been synonymized with *phillyrae*.

The figure on the right shows the morphology of the slide mounted pupal case. The figure on page 12 shows an in situ pupa illustrating the glassywax topped siphon tubes and an empty pupal case with the central dorsal wax band pushed aside by the emerged adult.

EUGENIA PSYLLID, *Trioza eugeniae* -(Q)- Like the whitefly species above, a find of this pit-making psyllid constitutes a new California and new North American record. The following report outlines the original finds:

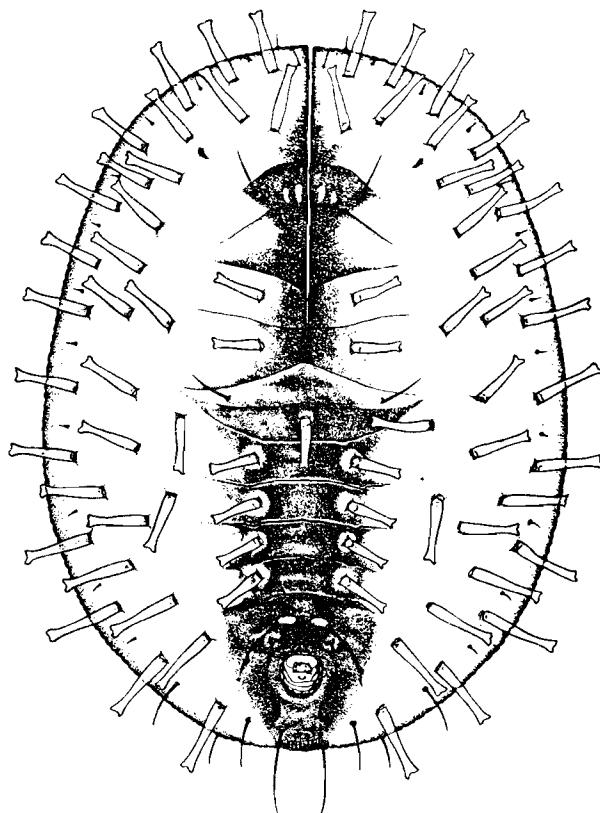
A new psyllid, *Trioza eugenia*, has been detected in California. A homeowner in Inglewood, Los Angeles County, brought the psyllid to the Los Angeles County Department of Agriculture for identification on May 4, 1988.

Los Angeles County Insect Taxonomist Rosser Garrison made the initial identification and submitted it to CDFA for confirmation. Insect Biosystematist Ray Gill determined the psyllid was *Trioza eugenia*. The determination was confirmed by Keith Taylor, Australian psyllid specialist with CSIRO, Tasmania. According to Gill, this is the first North American occurrence of the psyllid, which is native to Australia.

Since its initial detection, *eugenia* psyllid has been found in Arroyo Grande, San Luis Obispo. The collection was made by a homeowner and submitted to the Agricultural Commissioner on September 28. The psyllid has also been collected from nursery stock in a number of locations around the state including Arroyo Grande (San Luis Obispo County), Oakland and Fremont (Alameda County), Trabuco Canyon (Orange County), Santa Barbara (Santa Barbara County) and Carmel (Monterey County).

The psyllid causes pit galls on the host leaves, petioles, and young stems. On the leaves, the nymphs feed on the lower surfaces, causing a concave pit on the lower surface and a corresponding raised area on the upper surface. Several nymphs per leaf cause a downward curling of the leaf edges and a severe general distortion. Feeding by the nymphs on the leaf petioles and young stems causes swelling of tissue and the typical concave pits.

This is apparently the first record of this species outside of Australia, where the psyllid probably causes little harm. However, in California the species seems to be without



From "Contributions to a knowledge of the Whiteflies,"
Priesner and Hosny, 1962. plate V.

natural checks and is developing populations which are severely debilitating the host.

Damage is very similar to that caused by the pepper tree psyllid, *Calophya rubra*, in that the nymphs cause a severe distortion of the new growth, a reddish discoloration of that new growth, and an overall unthriftiness of the entire plant. So far, the psyllid is restricted to Australian bush cherry, *Syzygium paniculatum* (=*Eugenia myrtifolia*), a waxy-leaved ornamental shrub often used as a hedge or small tree in California.

CHRYSOMYA BLOW FLIES, *Chrysomya* spp. -(Q)- Two species of the Old World blow fly genus *Chrysomya* spp. have recently been detected for the first time in California. The following report by John Poorbaugh and Eric Fisher describe these new pests:

Chrysomya rufifacies, the hairy maggot blow fly, is of veterinary and medical significance. Larvae of this fly were found in Los Angeles, Orange and San Diego Counties in late 1987. David Faulkner, Curator of Entomology at the San Diego Museum of Natural History, made the collections and initial identifications of larvae, all of which were found on human cadavers. Adults reared from these larvae confirm Faulkner's identification.

Chrysomya rufifacies is known as the "hairy maggot" fly because the larvae have prominent tubercles on the dorsal surface, giving it a hairy appearance. The adults are a metallic green color with blue bands on the thorax and abdomen. This fly has been previously reported from Hawaii, Arizona, Texas and Mexico, as well as Central and South America.

In its native regions of the Orient and Australia, this fly breeds in carrion, garbage and open privies, but it has also been reported as causing myiasis in livestock and humans. In the U.S., it has been implicated in the death of newborn calves and lambs in Hawaii and has been found in wounds on cattle, sheep and dogs in Texas and Arizona.

A second species of *Chrysomya*, *C. megacephala*, was discovered in Los Angeles County on August 6, 1988. Steve Kutcher, a consulting entomologist, first found this fly in emergence traps at Scholl Canyon Landfill, in the Eagle Rock area of Los Angeles. Kutcher has trapped additional specimens in Altadena, Los Angeles County. CDFA Insect Biosystematist Eric Fisher made the identification of this species. These are the first records of *C. megacephala* from the mainland United States.

Chrysomya megacephala is a common and important "filth fly" in the Old World, especially in the Orient where it is very common. Larvae of this fly lack hair-like tubercles and have a smooth appearance. They generally act as scavengers, feeding on decomposing organic matter. In areas with poor sanitation, this fly may be very abundant and of concern to public health. It is generally not considered a threat to healthy livestock.

The species was first reported from the New World in 1975, where it was discovered in Brazil. It has since been found in several other countries in South America. In 1987, it

was found in Mexico. It has been present in the Hawaiian Islands for many decades.

In response to these finds, local veterinarians, state and county biologists, and entomologists should be made aware of the presence of these two new blow flies. This is especially true of *Chrysomya rufifacies*, whose presence merits close monitoring due to its potential for causing harm to humans, livestock and pets in California.

TENEBRIONID BEETLE, *Zophobas atratus* -(Q)- The following report by Fred Andrews outlines concerns over a new potential pest danger to grain products in California.

The species *Zophobas atratus* has two junior synonyms, *Zophobas morio* and *Zophobas rugiceps*. Recent systematic work has shown them to be the same species.

In September of 1985, Dan Kail, USDA/APHIS, destroyed a culture of *Zophobas* belonging to a Maurice Chouinard of Carson City, Nevada. This was done in cooperation with the Nevada Department of Agriculture. Chouinard gave several stories of how he acquired the culture. In addition, he volunteered that he had earlier been "closed down" in Fresno, California for culturing insects, and that he was involved in franchising the *Zophobas* as a fishing bait to a Dale Basset of Visalia, California.

Bob Bechtel of the Nevada Department of Agriculture talked with Basset and explained that the possession or distribution of *Zophobas* was illegal. In 1985, the Tulare County Commissioner's office submitted specimens from Basset's facility.

Dr. Fred Andrews of the Analysis and Identification laboratory identified the sample as *Tenebrio obscurus*, a common mealworm. Apparently the colony has been perpetuated on the basis of being *Tenebrio obscurus*.

In 1987, the County of San Bernardino submitted larval *Zophobas* specimens for identification. They were collected at Rainbow Bait. Andrews could not positively identify the specimens at the time and asked for a sample of adults. Rainbow Bait told the San Bernadino County official that the insects were hormone-treated *Tenebrio obscurus* thereby made incapable of producing adults. Further evidence has connected Rainbow Bait with Basset's operation.

Additional study of the larval specimens placed them in the genus *Zophobas*. The submission of an adult by San Bernardino County confirmed the identity of the genus and allowed the specific identification of *atratus* to be made.

Zophobas atratus is known to exist in Mexico, Guatemala, Nicaragua, Costa Rica, Colombia, Venezuela, Trinidad, Brazil, Argentina and numerous islands in the West Indies. It is not established in the Old World, although it is cultured in Europe as food for zoo animals. There were early reports of it being established in Southern Florida, but never verified. It was collected once in compost near Tuscon, Arizona, but is not thought to be established there.

There are 15-20 described species from Central and South America in the genus. All are associated with composted material or guano in bat caves. *Zophobas atratus* was imported into the United States by Dr. Walter Tschenkle in 1966 under a permit issued by the USDA. He has maintained them in culture since, and published a number of papers on their biology and physiology.

Tschenkle reported that the beetles are readily reared on a substrate of pure bran. Tschenkle has not tried other substrates, but opines that wheat, corn, or composted vegetable matter would be suitable. In laboratory cultures very high densities are normal. 50 to 100 individuals per liter are common. Pupation is inhibited when populations are dense and the larvae must disperse away from the colony in order to pupate.

This and other evidence give reason to believe that *Zophobas atratus* could become a pest of stored grain products in California. The USDA has quarantined it in Nevada and the Canadian Department of Agriculture recently quarantined a shipment from Basset. The presence of the insect in California might initiate quarantines against California grain products.

SURINAM COCKROACH, *Pycnoscelus surinamensis* -(C)- The first known California infestation of this burrowing roach has been made in a cafe in Indio, Riverside County. The collection was made by V. Gonzalez, a control service technician for a pest control firm. The roaches were observed while treatment was underway in the cafe. The specimens were recognized as unusual and were submitted to L. Gillis of the Riverside County Agricultural Commissioner's office.

The species in this genus of roaches are primarily indigenous to the Old World tropics. Some species are occasional pests in their native areas, but only the Surinam roach is becoming a pest of world-wide status. It is apparently native to the islands of the Malay Archipelago. It has been spread round the world via shipping, and now occurs virtually throughout the tropical regions of the world, including Hawaii. It is also becoming established in many areas in the New World subtropics, including Florida, Louisiana and Texas. It has also been a problem in some protected locations in Germany, England and Scotland.

This cockroach is a medium-sized insect reaching 25 mm in length. All stages are dark brown to black, although the wings of the adults are contrastingly lighter in color than the rest of the insect. Because of the contrast in color, the roach is sometimes called the bicolored roach. Most individuals will have the anterior portions of the pronotum pale, and have two dark stripes and a pale area in the basal portion of the wings of the adults. Egg cases are light colored and crescent-shaped, but are usually held internally.

This species is parthenogenetic. Adult females will live for more than 300 days, producing one to five broods of young.

The natural habitat of this roach is normally the outdoors, in such environments as under stones, in leaf litter and burrowing in loose soil. A number of quarantine interceptions of this roach coming into California have been from the soil of potted plants. It is a plant feeder and has been known to cause injury to commercial and economic plants in greenhouses. It is also considered to be a household pest in many

areas of the world.

A TREEHOPPER, near *Idioderma* sp. -(Q)- This unusual treehopper was collected for the first time in California at San Bernardino, San Bernardino County. The collection was made by landscape gardeners at a motel complex in that city on August 3 and submitted to the Agricultural Commissioner's office . The hoppers were producing honeydew copiously, which became a nuisance on a parking lot and automobiles. The gardeners found nymphs heavily infesting the flower stalks of the Mexican fan palm, *Washingtonia robusta*.

The species is very likely undescribed and is morphologically similar to two other species in the genus *Idioderma* which are known to feed on palmettos in Florida and the Caribbean area. California specimens are larger and manifest enough other differences to conclude they are distinct from either of the Florida/Caribbean species. No other treehoppers are known to feed on palms anywhere in the world. It is assumed that they may actually be native to the fan palm in Mexico. Surveying for the hoppers is nearly impossible because the affected trees seldom bloom until they are quite tall. The infested trees in San Bernardino were 50-60 feet tall and were sampled with a special lift device. It is unknown whether this treehopper will attack parts of the tree other than flower stalks or if it will attack the native California fan palm.

EXCLUSION AND DETECTION

RED IMPORTED FIRE ANT, *Solenopsis invicta* -(A)- This serious pest species has been found nesting in the ground at a nursery in Carpinteria, Santa Barbara County. The following report by John Pozzi outlines the find:

Red imported fire ant was found in Carpinteria, Santa Barbara County on August 31, 1988. It was found under the back wall of a commercial nursery. CDFA Inspector Tony Haro and Santa Barbara County Department of Agriculture Biologist Tiana Melquist are credited with making the find and found it as part of the statewide imported fire ant survey.

CDFA and Santa Barbara County Department of Agriculture initiated a delimiting survey on September 16, 1988, but no further finds have been made.

CDFA issued a pest exclusion alert on May 23 discussing an red imported fire ant quarantine interception in California. The alert presented the following information:

Reproductive forms of the imported red fire ant were found by Los Angeles County in a quarantine shipment of nursery stock from Florida. Dennis Vinopal and Brian Tanaka of Los Angeles County found two live dealate female ants (that had shed their wings)

in containers of *Radermachera* sp. from Vallico Nursery in Florida.

Marius Wasbauer of the CDFA lab identified the ants. He noted that the dealate females have a better than 90% chance of having been mated. The ants (and other insects) were treated and released. The receiving nursery in California will be targeted for the upcoming Imported Fire Ant survey being coordinated by Pest Detection and Emergency Projects. Penalties will be pursued.

In addition, several infestations have been found in the vicinity of Phoenix, Arizona. The following report by Stephan Brown summarizes that situation:

The Arizona Department of Agriculture reports eight locations in the Phoenix area have been found positive for red imported fire ant. Arizona has all sites on hold and is implementing an intensive detection survey. To date, only two nests have been found. One nest was located under a cement slab in a housing development only six months old. The other nest was found in a gallon pot in a nursery. The positive finds were located in Scottsdale, Glendale, Buckeye, and South Phoenix.

As a result of the finds, quarantine officers were placed on alert to watch for ants in potted plants from the specified areas.

Inspectors in Arizona have found that moving and banging on the sides of the containers is effective in getting ants to move out of pots where they can be collected and submitted for identification.

JAPANESE BEETLE, *Popillia japonica* -(A)- The following interceptions have been made over the summer:

County	Adults Trapped	Date Last Adult Trapped	Airport Interceptions Live/Dd/Tot	Date Last Airport Interception
ALA	0	----	2 18 20	08/09/88
LAX	2	07/29/88	0 16 16	07/28/88
ORA	0	----	1 0 1	07/14/88
SAC	0	----	0 1 1	08/22/88
SBD	0	----	9 34 43	08/02/88
SDG	0	----	0 4 4	07/16/88
SMT	0	----	0 4 4	07/15/88
SCL	0	----	0 3 3	07/21/88
Totals	2		12 80 92	

TILLANDSIA THrips, *Phrasterothrips* sp. -(Q)- Specimens of this thrips were intercepted on June 6, 1988 by Colleen Brown of San Diego County in a shipment of Tillandsia from Guatemala City. Steve Nakahara of the U.S. National Museum identified it as *Phrasterothrips*.

Later specimens were collected from Tillandsia plants in a nursery greenhouse in Gardena, Los Angeles County, on June 24 and submitted to CDFA by Dr. Bill Ewart of U.C. Riverside. Following is a general account of the genus:

These are medium-sized thrips usually having two pairs of long epimeral setae. Males have the major posterior setae on abdominal tergite IX equally long, and with each antenna eight-segmented.

Although principally a genus of South American distribution, some specimens have been found in Costa Rica and Florida. Apparently these specimens represent new species.

This genus may be represented by species that are of two distinctive kinds. One is the normal type in which the individuals bear two pairs of long epimeral setae. In the other type, individuals have a longer head and each of the inner pair of epimeral setae are small. In Brazil, for example, *P. conducans* is a normal species whereas *P. omer-cooperi* is a variant species bearing only one pair of long epimeral setae.

Like their distant relatives, the species of *Holothrips*, males of *Phrasterothrips* have the lateral posterior pair of setae on abdominal tergum IX as long as the mid-pair of setae. The genus needs to be re-analyzed to determine its exact limits.

Billbugs (*Sphenophorus* spp. - weevils) survive passage through digestive tract of western toads (*Bufo boreas*)

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The western toad (*Bufo boreas*) is common in suburban areas of central and southern California where residential landscape and irrigation practices provide favorable habitat for its survival (Pickwell, 1972). Residential habitats often include warm season turf grasses (Beard 1973); popular plantings are cultivars



Sphenophorus venatus vestitus Chittenden

of bermuda grass (*Cynodon dactylon*) and, more recently, zoysia grass (*Zoysia matrella*). Billbugs (*Coleoptera: Curculionidae*) are known to feed on these grasses. *Sphenophorus phoeniciensis* Chittenden and *S. venatus vestitus* Chittenden complete their life cycles in bermuda grass and zoysia grass, respectively (Bohart, 1947; Juska 1965; Kelsheimer 1956; Klostermeyer 1964). Vaurie (1951; 1967) has described the biology and distribution of *S. phoeniciensis* and *S. venatus vestitus*.

Curculionidae (weevils) have been identified in the diet of several of the Bufonidae (toads) (Campbell 1970; Fair 1969; Livezey 1961; Penllantova 1978; Schonberger 1945; Smith and Bragg 1949; Telford and Munro 1944). Some weevil species are reportedly not digested by *Bufo* spp. For example, Smith and Bragg

(1949) found a small, unidentified weevil that regularly resisted digestion by *B. cognatus*. Fair (1969) documented the survival of *S. phoeniciensis* through the digestive tract of *B. boreas*.

The purpose of our study was to assess the dietary impact of billbugs on a suburban population of western toads (*B. boreas*).

MATERIALS AND METHODS

Western toad (*B. boreas*) fecal pellets were collected between September 9 and October 14, 1988, from a 0.06 ha residential lawn (cultivar of hybrid bermuda, *Cynodon dactylon* x *C. transvaalensis*), in Bakersfield, California (35°N. 119°W). Pellets were collected daily between 06:00 and 08:00 and individually sealed in 4x8 cm envelopes constructed from 1 mm mesh plastic screen. Enveloped pellets were returned to the study area for 24 hours, after which time envelopes were opened and emergent billbugs counted. Pellets were dissected to determine the numbers of nonemergent (both live and dead) billbugs. These were preserved in 70% ethanol for later identification.

Billbug species were determined using a key for identification constructed by Vaurie (1951).

RESULTS AND DISCUSSION

Our analysis of 79 fecal pellets from *B. boreas* revealed that *S. phoeniciensis* and *S. venatus vestitus* were present in 68% (54/79) of pellets examined. A total of 300 intact (undigested) billbugs were recovered from 54 pellets. Billbug density (numbers per pellet) ranged from 1 to 26; mean density was 5.6 (SD=5.6, N=54).

Sixty-two percent (186/300) of ingested billbugs passed through *B. boreas* undigested and 49% (148/300) of these emerged unimpaired from fecal pellets. Fair (1969) reported a comparable 47% (17/36) of *S. phoeniciensis* emerged from fecal pellets of *B. boreas*. Differences in survivorship between *S. venatus vestitus* and *S. phoeniciensis* were not observed.

Our study corroborates the observation that *S. phoeniciensis* is not digested by *B. boreas* (Fair 1969) and documents the same for *S. venatus vestitus*. *B. boreas* derives few if any calories from ingested billbugs.



Sphenophorus phoeniciensis Chittenden

Acknowledgements: We thank T.D. Eichlin for helpful comments provided on an earlier draft of this manuscript.

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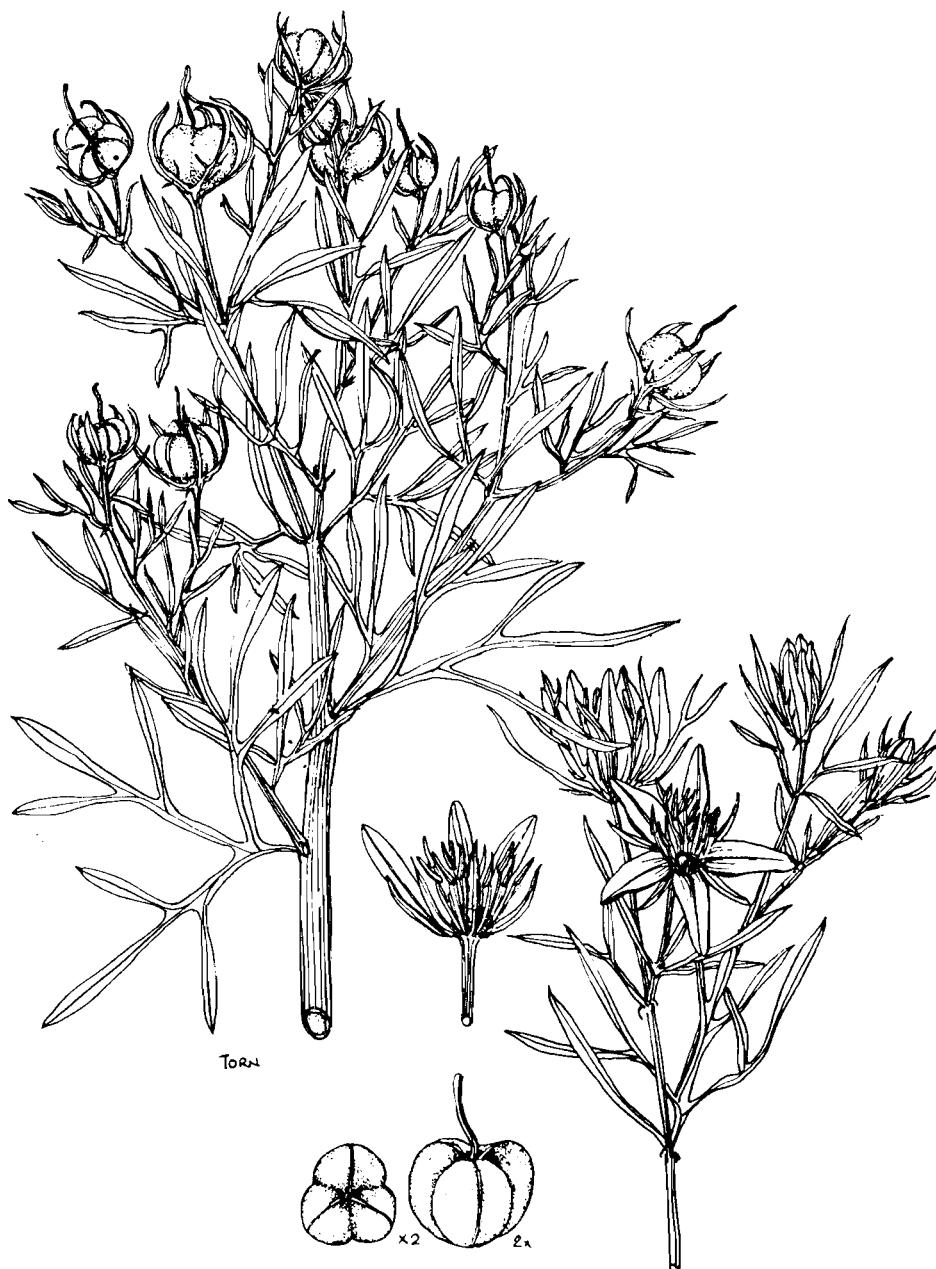
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BOTANY HIGHLIGHTS

NEW STATE RECORDS

HARMEL, *Peganum harmala* -(A) - Harmel was discovered for the first time in California on July 1, 1988 in San Bernardino County near Daggett. San Bernardino County Agricultural Biologist Pete Lounsbury discovered clumps of harmel while surveying an abandoned pasture.

Harmel



Drawing taken from Flora Palestina, Part II, Zachary, M, 1972, plate 352.

This is the first known established infestation of harmel in the state; the only previously known occurrence in California was in September, 1978 as nursery stock in a herb garden at Vista, San Diego County. Harmel is a threat to California agriculture because of its tenacious growth habit under dry rangeland conditions, and because it is toxic to livestock.

The weed had been known to California biologists for the past 23 years as a persistent colony around a stock watering tank on the Walker Indian Reservation south of Fallon, Nevada. It is still alive and thriving there as recently as 1986, despite the eradication efforts undertaken in Nevada over the years.

Harmel has also been recently found in Montana, but it is more commonly found in Arizona, New Mexico, and western Texas.

Harmel is native to the

deserts of the Middle East and North Africa, hence its other common names "African rue" and "Syrian rue."

CAPEWEED, *Arctotheca calendula* -(A)- An infestation of Capeweed has been found in Humboldt County. This is the first established infestation of fertile Capeweed known in the state. The only previously known occurrences of this species have been sterile plants, widely planted for ground cover in central and southern California.

This new infestation was first noticed about three years ago on a dairy farm west of Ferndale. CDFA was made aware of the infestation in June, 1988 by June McCaskill at the U.C. Davis herbarium.

Capeweed, (see drawing at right) as fertile plants and seeds, threatens California agriculture because it is an aggressive invader of irrigated pasture, coastal rangeland, and landscaping. Although not toxic to livestock, it has very poor forage value and taints dairy products.

The species has been rated "Q" in California since it was first intercepted as a contaminant of Australian subterranean clover seed in 1974. It is a proclaimed noxious weed throughout temperate Australia and Tasmania, as well as the South Island of New Zealand.

NEW COUNTY RECORDS

PUNA GRASS, *Stipa brachychaeta* -(A)- This weed was found near Livermore, Alameda County on February 19, 1988. CDFA Associate Agricultural Biologist Ron Eng and Alameda County Agricultural Biologists Casey Jones and Matt Owen made the discovery. Doug Barbe confirmed the find. An initial study showed 15 plants in a confined area.

This is a significant new occurrence of puna grass in the state. Previously it has been found near Santa Ynez, Santa Barbara County and taken from Flora of the Australian Capital Territory, p.25. near Camarillo, Ventura County. It was also found in Fresno County in the late 1940s. See the map on page 27 for known locations of puna grass infestations in the State.

HYDRILLA, *Hydrilla verticillata* -(A)- A number of new county records have been detected for this serious aquatic weed pest during 1988. The following reports by John Pozzi and Nate Dechoretz outline the

Hydrilla was found for the first time in Calaveras County on May 26 and 27, 1988. Two ponds were found to be infested.



Initially the hydrilla was found on May 26, 1988, mixed with a dense growth of coontail, *Ceratophyllum demersum*, in a half-acre pond. The pond is located along Highway 12 near the town of Wallace.

The first specimen was brought to the CDFA Botany Laboratory in Sacramento by the property owner, Greg Perock. Perock had been alerted by a public information brochure on hydrilla he obtained from the agricultural commissioner's office. His pond was clogged with weedy growth.

In response to the find, CDFA Pest Detection/Emergency Projects and Control and Eradication personnel, in cooperation with Calaveras and San Joaquin County personnel, conducted a delimiting survey on May 27 and found a second pond of approximately 15 acres infested with hydrilla. The second find was located approximately one mile upstream from the other infested pond.

Hydrilla was found at two more locations near Wallace, Calaveras County on June 7, 1988.

While making a delimiting survey near earlier hydrilla locations on June 7, CDFA Area Manager Aurelio Posadas and Associate Agricultural Biologist Denis Griffin found hydrilla in two ponds along Pettinger Road.

The closest previous location was approximately two miles west in a pond on Southworth Road. The two ponds are upstream from the hydrilla infested ponds reported earlier. Doug Barbe made the determinations.

CDFA Pest Detection/Emergency Projects and Control and Eradication personnel, in cooperation with Calaveras and San Joaquin County personnel, are continuing their extensive delimiting survey. Treatment operations with Komeen have been completed on the first two infested ponds. The latest locations were treated on June 14. All infestations were subsequently treated with Komeen every two weeks.

Hydrilla was found at three additional new locations near Wallace, Calaveras County.

While making delimiting surveys near previous hydrilla finds, teams composed of employees of CDFA, Calaveras and San Joaquin Counties found three new hydrilla infested ponds. A one-acre pond along Burson Road was found infested by Area Manager Tom Palmer and Associate Agricultural Biologist Ross O'Connell on June 8.

CDFA Associate Agricultural Biologist Denis Griffin and Calaveras County Agricultural Biologist Douglas Norfolk are credited with finding hydrilla the next day in a one-acre pond along Southworth Road. On June 27, Douglas Norfolk found an infested 0.1 acre pond along Messing Road.

Since the first find on May 26, CDFA, Calaveras, and San Joaquin County Departments of Agriculture personnel have cooperated in conducting a delimiting survey. Pond

locations have been mapped by helicopter. Ground crews inspected ponds within one mile of infested ponds along the Bear Creek drainage and survey activities continued in the Disappointment and Pixley Slough areas.

Hydrilla was found in seven ponds the Calaveras county totaling 21.75 acres. CDFA crews treated the infested ponds with Komeen to remove top growth and then with Sonar to prevent regrowth.

Hydrilla has been found for the first time in San Bernadino County. On August 23, 1988, San Bernadino County Agricultural Biologist Pete Lounsbury found hydrilla in four concrete lined landscape ponds at a Barstow residence. Lounsbury spotted the hydrilla while responding to the homeowner's request concerning an insect problem.

CDFA and San Bernadino County Department of Agriculture are investigating the source of the hydrilla's introduction. Lounsbury's records indicate the the nearest known occurrences to this hydrilla location were in the Los Angeles area in the 1980s, and near Coachella, Riverside County, from 1977.

Hydrilla was found August 30 and 31, 1988, at a new location in Calaveras County. The site is near Mokelumne Hill and is approximately 22 miles northeast from previously reported hydrilla locations in the Wallace area.

Calaveras County Agricultural Biologists Karl Kerstan and Doug Norfolk and CDFA Associate Biologist Ross O'Connell found the hydrilla infesting two adjacent ponds along Jesus Maria Road. The ponds are one-half and one-tenth acre in size.

See page 28 for California map showing known locations of hydrilla infestation in the state.

DIFFUSE KNAPWEED, *Centaurea diffusa* -(A)- This weed has been found for the first time in Monterey County on the roadside off Highway 101 near San Lucas. The nearest previously reported location is in Mariposa County.

The knapweed was found by CDFA biologist Denis Griffin, and Branden Oliver, Monterey County biologist, on May 24, 1988. Diffuse knapweed in more often seen in the northern part of the state in Del Norte, Humboldt, Siskiyou, Trinity, Modoc, and Lassen counties, where it is a significant threat to rangeland. Doug Barbe, CDFA Senior Plant Taxonomist, made the determination. See page 29 for California infestation map for this weed.

BARB GOATGRASS, *Aegilops triuncialis* -(B)- Barb goatgrass was found for the first time in Contra Costa County August 12, 1988 in a pasture near Martinez. Vince Guise is credited with the find.

This is a new county record for the species. The nearest previously known location is in eastern San Joaquin County. Other nearby infestations are in northern Solano County. Barb goatgrass is most frequently found in the Sierra foothills. See page 30 for California infestation map for this weed.

SCOTCH THISTLE, *Onopordum acanthium* -(A)- and CANADA THISTLE, *Cirsium arvense* -(B)-

Scotch thistle has been found for the first time in Alpine County.

On September 21, 1988, El Dorado County Department of Agriculture Biologist Bob Stewart spotted the thistle while surveying the area. Eight plants and six rosettes were found. Bob removed plant heads and treated the Scotch thistle. In addition to the Scotch thistle, Bob also found Canada thistle at the same location and treated it. Doug Barbe made the determinations.

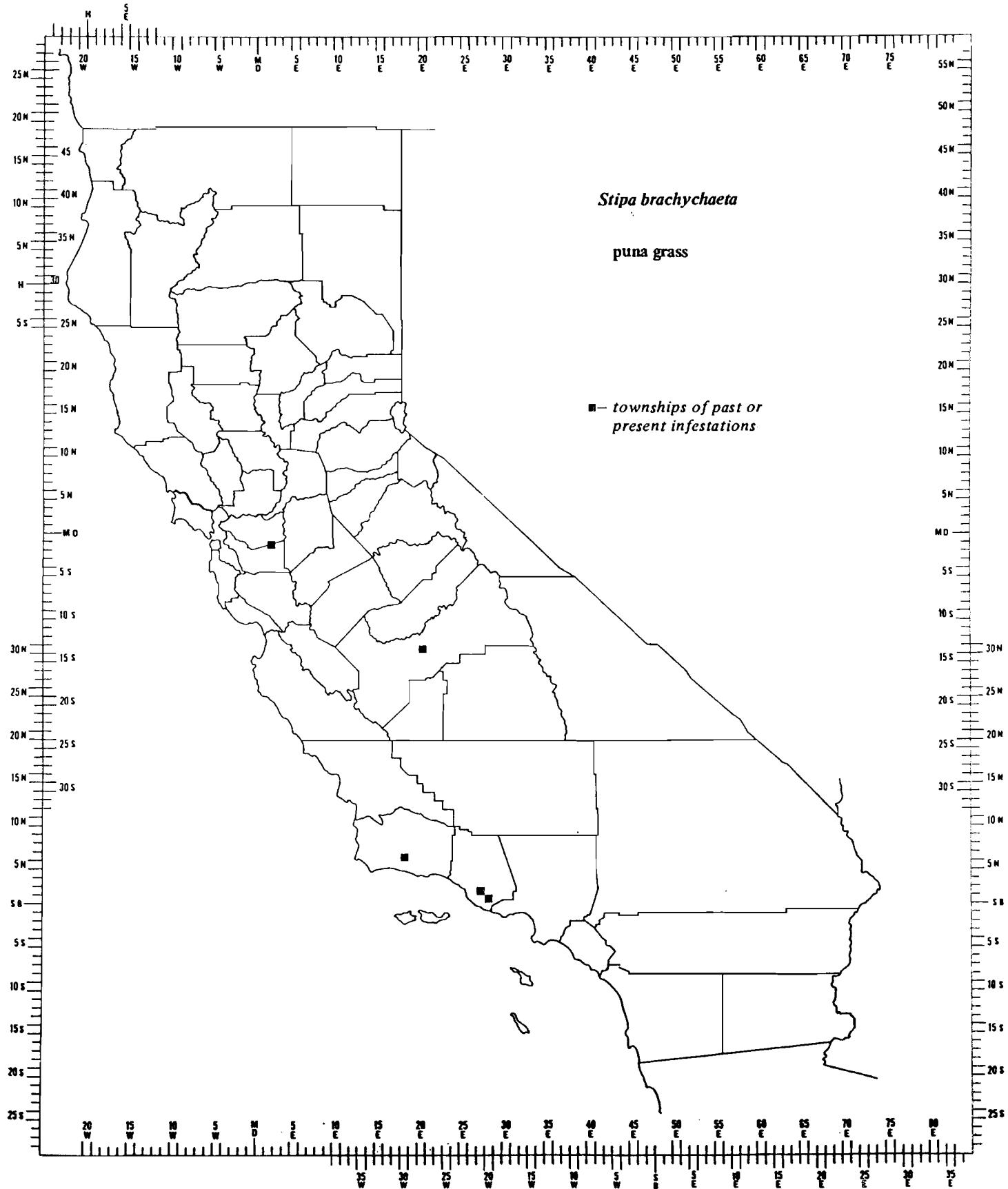
The nearest previously known occurrences of Scotch thistle are in Calaveras County near Arnold and in Douglas County, Nevada. The closest known locations for Canada thistle are near Woodfords in Alpine County. See page 31 for California infestation map for this weed.

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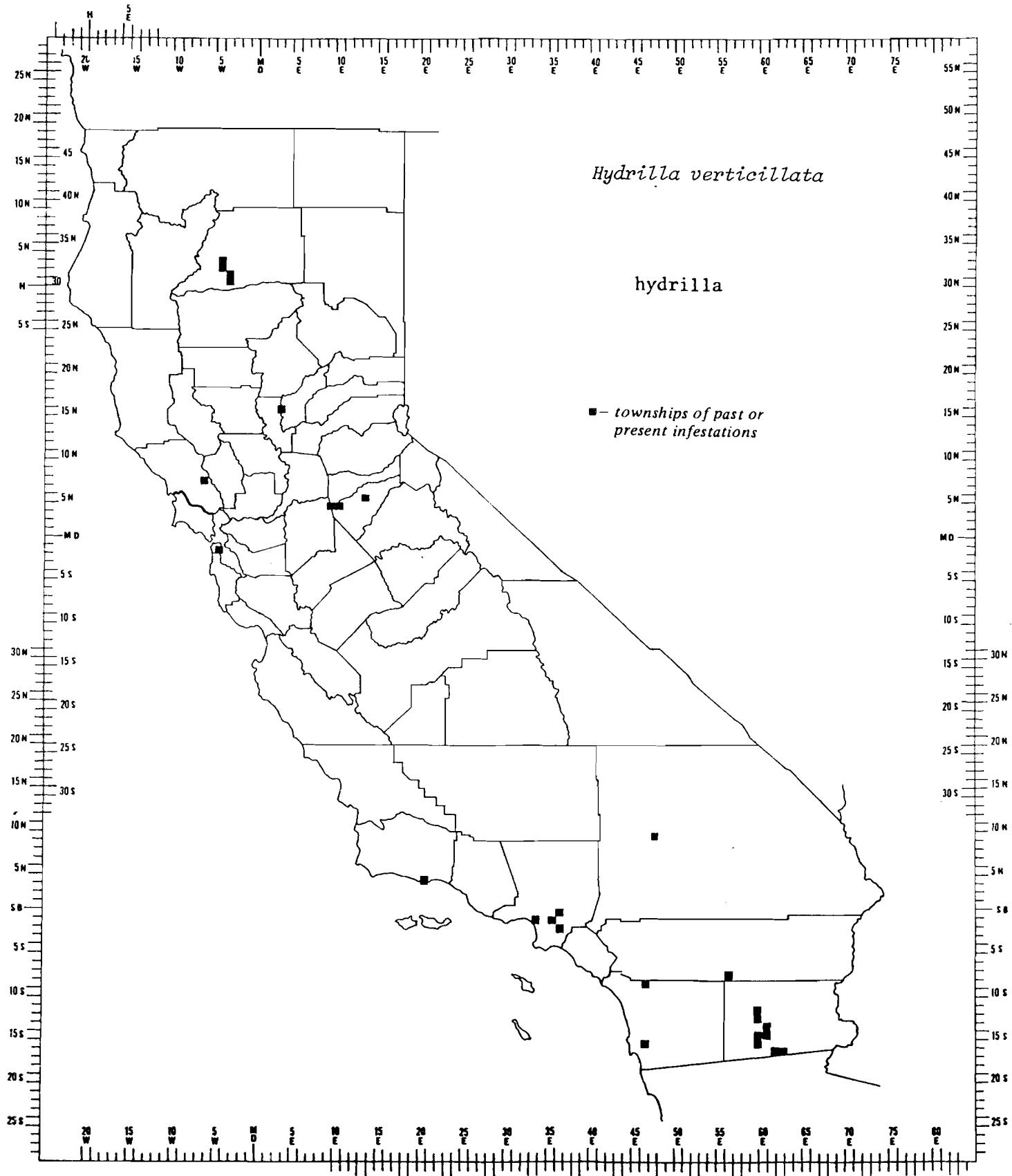
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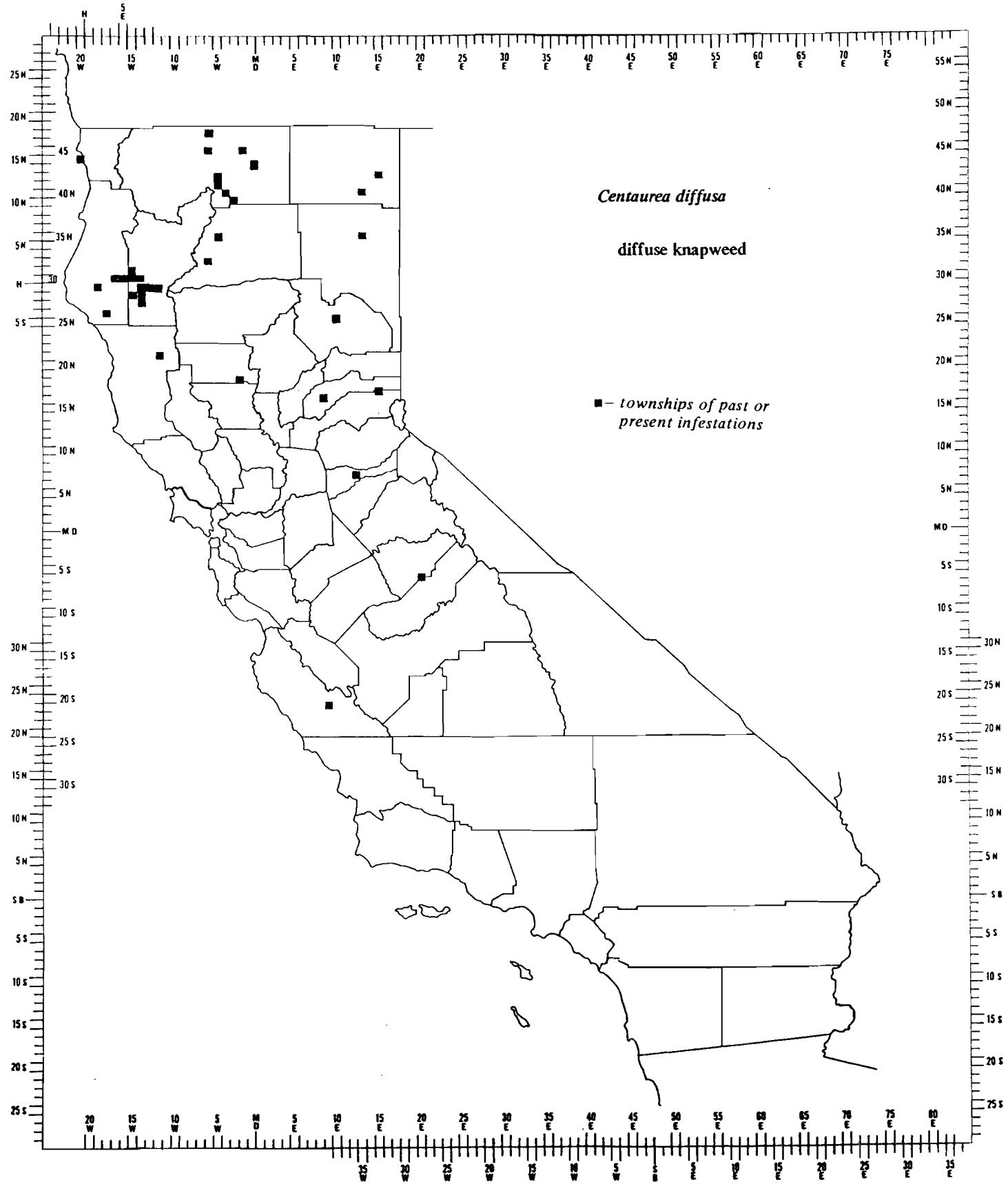


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DETECTION MANUAL
D.T. 6:23a

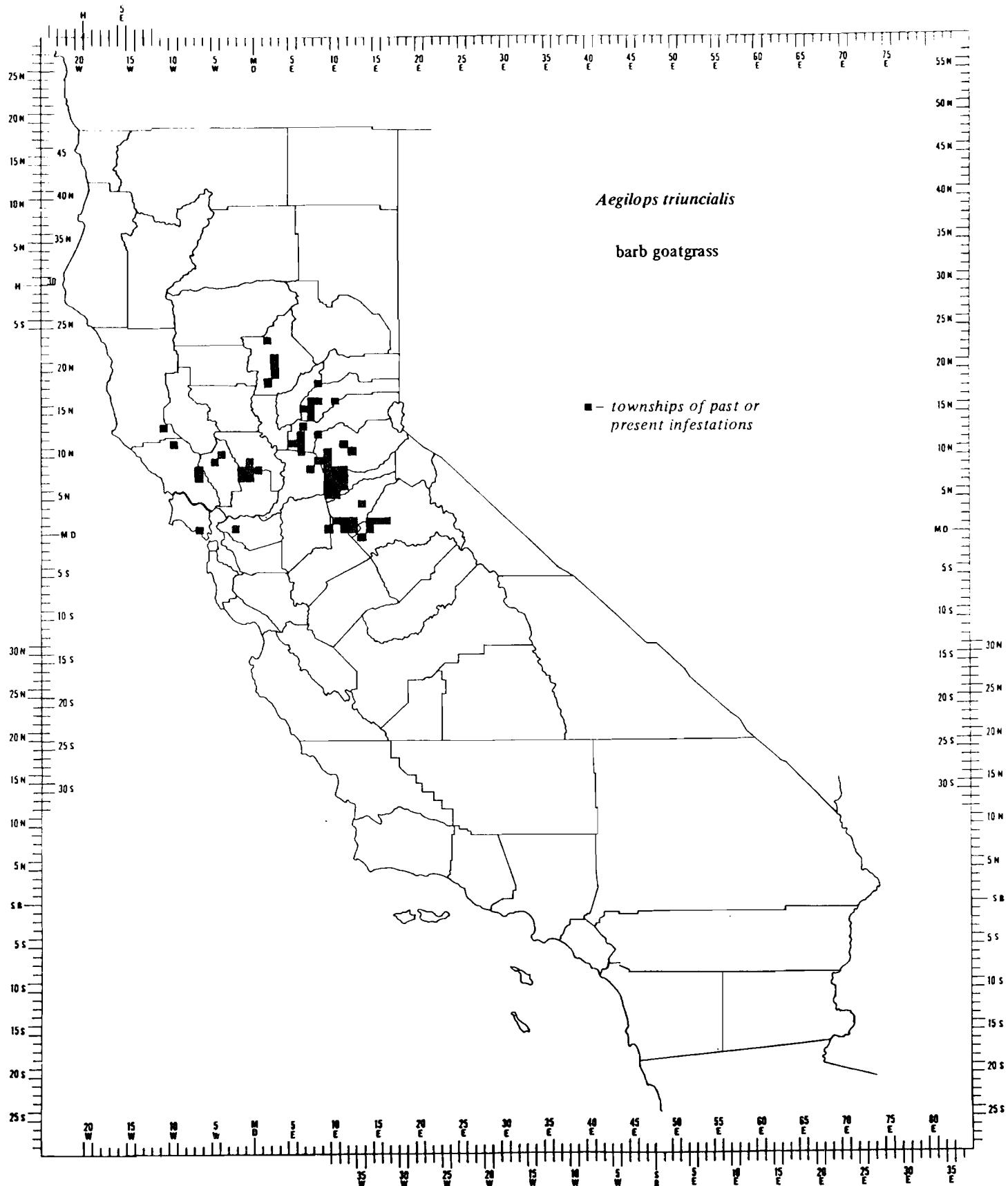


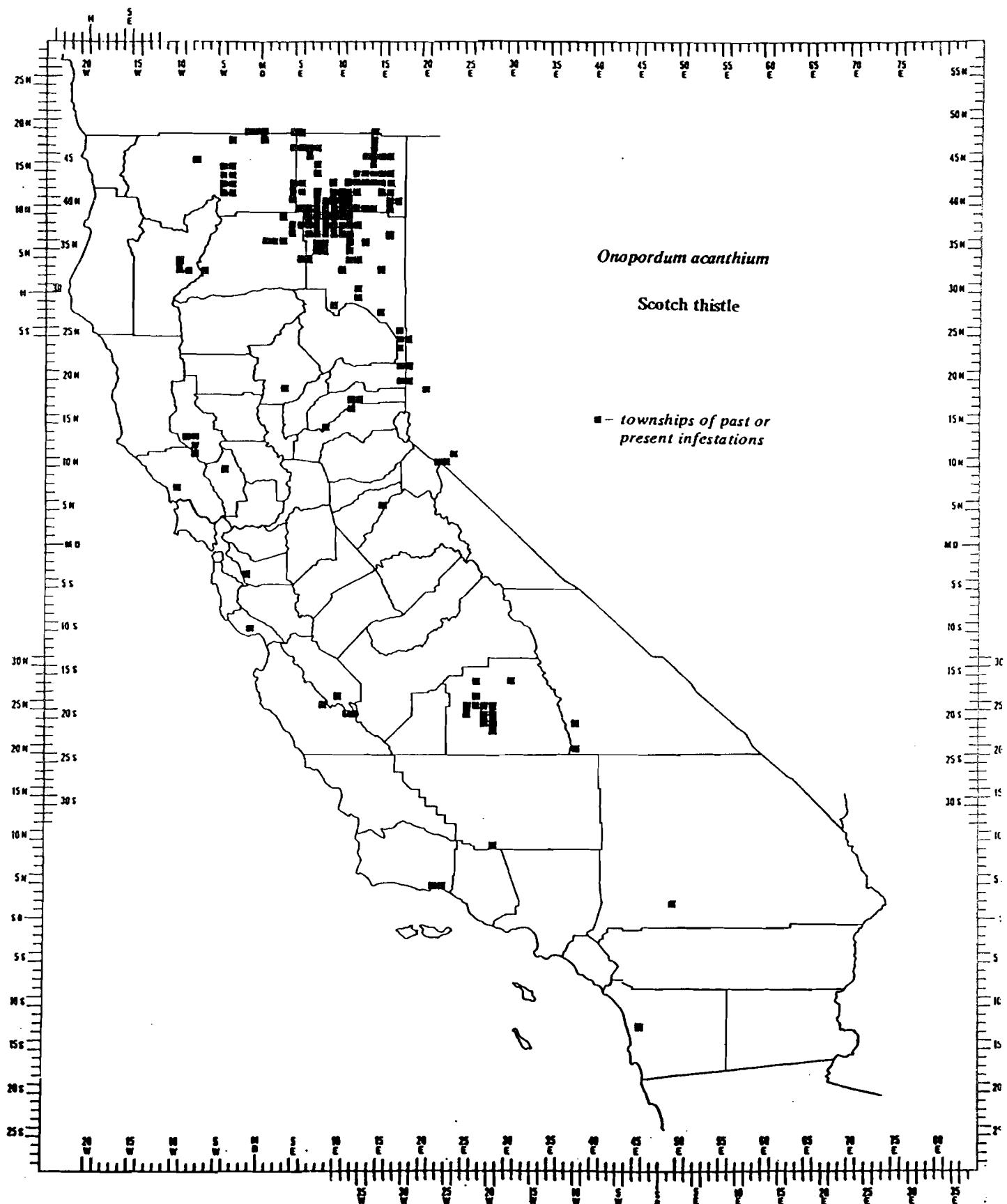
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DETECTION MANUAL
D.T. 6:40a





The following "A", "B" and "Q" rated arthropods and mollusks were intercepted in quarantine during the period 5/15/88 to 8/30/88:

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
A	<i>Acarapis woodi</i>	tracheal mite	08/22	NV	SHA	apiary	Kanich
A	<i>Acarapis woodi</i>	tracheal mite	08/22	NV	SHA	apiary	Kanich
A	<i>Acarapis woodi</i>	tracheal mite	08/22	NV	SHA	apiary	Kanich
A	<i>Acarapis woodi</i>	tracheal mite	08/22	NV	SHA	apiary	Kanich
A	<i>Acarapis woodi</i>	tracheal mite	08/22	NV	SHA	apiary	Kanich
A	<i>Acarapis woodi</i>	tracheal mite	08/22	NV	SHA	apiary	Kanich
Q	<i>Amblyomma marmoreum</i>	a tick	06/28	Africa	LAX	tortoise shell	Olson
Q	<i>Eriophyes litchii</i>	a tick	06/28	Africa	LAX	tortoise shell	Gonzalez
Q	<i>Adoretus sinicus</i>	an eriophyid mite	07/06	HI	SFO	Litchi chinensis	Koller
Q	<i>Adoretus sinicus</i>	Chinese rose beetle	06/15	HI	FRE	automobile	Blakenship
Q	<i>Anomala orientalis</i>	Chinese rose beetle	07/21	GA	SMT	Cordyline terminalis	Buerer
Q	<i>Anomala orientalis</i>	Chinese rose beetle	08/25	HI	SDG	aircraft	Syzonenko
Q	<i>Oriental beetle</i>	Oriental beetle	07/13	OH	SAC	aircraft	Weiner
Q	<i>Oriental beetle</i>	Oriental beetle	08/05	MO	LAX	aircraft	Hooper/Ison
Q	<i>Oriental beetle</i>	Oriental beetle	07/20	OH	LAX	aircraft	Hooper
Q	<i>Oriental beetle</i>	Oriental beetle	07/06	MO	LAX	aircraft	Blankenship
Q	<i>Oriental beetle</i>	Oriental beetle	07/18	MA	LAX	aircraft	Ison/Hooper
Q	<i>Oriental beetle</i>	Oriental beetle	07/13	OH	LAX	aircraft	Ison/Hooper
Q	<i>Oriental beetle</i>	Oriental beetle	07/13	OH	LAX	aircraft	Blankenship
Q	<i>Anomala sp.</i>	a scarab beetle	08/17	NY	LAX	aircraft	Mailho/Whitaker
Q	<i>Anomala sp.</i>	a scarab beetle	07/21	KY	ALA	aircraft	Ison
Q	<i>Anomala undulata</i>	a scarab beetle	07/22	FL	LAX	aircraft	Gonzalez
Q	<i>Dryocoetus pini</i>	a scarab beetle	07/18	Asia/Europe	SFO	wood damage	Gonzalez
Q	<i>Dryocoetus pini</i>	a bark beetle	07/11	Japan/Korea	ALA	wood	Gonzalez
Q	<i>Gonocephalum sp.</i>	a bark beetle	06/27	Thailand	SFO	orchids	Pastalka
Q	<i>Gonocephalum sp.</i>	a bark beetle	06/27	Thailand	SFO	orchids	Pastalka
Q	<i>Maladera castanea</i>	a darkling beetle	07/20	IL	SDG	aircraft	Gonzalez
Q	<i>Maladera castanea</i>	a darkling beetle	07/11	GA	SDG	aircraft	Gonzalez
Q	<i>Maladera castanea</i>	Asiatic garden beetle	07/21	WA	LAX	aircraft	Blankenship
Q	<i>Maladera castanea</i>	Asiatic garden beetle	07/22	GA	LAX	aircraft	Hooper
Q	<i>Maladera castanea</i>	Asiatic garden beetle	07/23	MD	LAX	aircraft	Blankenship
Q	<i>Maladera castanea</i>	Asiatic garden beetle	07/26	NY	LAX	aircraft	Ogoke
Q	<i>Maladera castanea</i>	Asiatic garden beetle	08/09	PA	SDG	aircraft	Gonzalez
Q	<i>Maladera castanea</i>	Asiatic garden beetle	08/11	NJ	LAX	aircraft	Hooper
Q	<i>Maladera castanea</i>	Asiatic garden beetle	07/14	NY	KRN	aircraft	Blankenship
Q	<i>Phyllophaga sp.</i>	may beetle/white grub	07/20	TX	SDG	aircraft	Gonzalez
Q	<i>Phyllophaga sp.</i>	may beetle/white grub	07/08	NY	SAC	aircraft	Weiner
Q	<i>Phyllophaga sp.</i>	may beetle/white grub	07/12	TN	LAX	aircraft	Blankenship

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Q	<i>Phyllophaga</i> sp.	may beetle/white grub	07/20	OH	LAX	aircraft	Hooper/Ison
Q	<i>Phyllophaga</i> sp.	may beetle/white grub	08/09	CO	SDG	aircraft	Gonzalez
Q	<i>Phyllophaga</i> sp.	may beetle/white grub	06/27	GA	LAX	aircraft	Hooper
Q	<i>Phyllophaga</i> sp.	may beetle/white grub	07/13	NY	LAX	aircraft	Ogoke
Q	<i>Phyllophaga</i> sp.	may beetle/white grub	07/18	KY	LAX	aircraft	Blankenship
Q	<i>Phyllophaga</i> spp.	a scarab beetle	07/22	FL	LAX	aircraft	Hooper
A	<i>Popillia japonica</i>	Japanese beetle	06/30	KY	ALA	aircraft	Mailho/Gould
A	<i>Popillia japonica</i>	Japanese beetle	06/30	KY	ALA	aircraft	Mailho/Gould
A	<i>Popillia japonica</i>	Japanese beetle	07/21	IL	SCL	aircraft	Martin
A	<i>Popillia japonica</i>	Japanese beetle	07/21	IL	SCL	aircraft	Martin
A	<i>Popillia japonica</i>	Japanese beetle	07/29	KY	SBD	aircraft	Velten
A	<i>Popillia japonica</i>	Japanese beetle	07/21	FL	LAX	aircraft	Hooper
A	<i>Popillia japonica</i>	Japanese beetle	07/21	KY	ALA	aircraft	Mailho/Whitaker
A	<i>Popillia japonica</i>	Japanese beetle	07/20	IL	LAX	aircraft	Ogoke
A	<i>Popillia japonica</i>	Japanese beetle	08/02	NJ	SBD	aircraft	Velten
A	<i>Popillia japonica</i>	Japanese beetle	07/21	FL	LAX	aircraft	Hooper
A	<i>Popillia japonica</i>	Japanese beetle	07/21	KY	ALA	aircraft	Hooper/Ogoke
A	<i>Popillia japonica</i>	Japanese beetle	07/15	KY	SBD	aircraft	Velten
A	<i>Popillia japonica</i>	Japanese beetle	07/15	NJ	SBD	aircraft	Hooper
A	<i>Popillia japonica</i>	Japanese beetle	07/18	MD	LAX	aircraft	Gonzalez
A	<i>Popillia japonica</i>	Japanese beetle	07/11	NY	SDG	aircraft	Syzonenko
A	<i>Popillia japonica</i>	Japanese beetle	07/11	NY	SDG	aircraft	Syzonenko
A	<i>Popillia japonica</i>	Japanese beetle	07/16	MN	SDG	aircraft	Drake/Evans
A	<i>Popillia japonica</i>	Japanese beetle	06/30	KY	SBD	aircraft	Velten
A	<i>Popillia japonica</i>	Japanese beetle	08/02	NJ	SBD	aircraft	Takahashi
A	<i>Popillia japonica</i>	Japanese beetle	07/13	OH	SMT	aircraft	Velten
A	<i>Popillia japonica</i>	Japanese beetle	08/02	KY	SBD	aircraft	Hill
A	<i>Popillia japonica</i>	Japanese beetle	07/14	TX	ORA	aircraft	Velten
A	<i>Popillia japonica</i>	Japanese beetle	07/21	KY	SBD	aircraft	Syzonenko
A	<i>Popillia japonica</i>	Japanese beetle	07/13	OH	SDG	aircraft	Gonsalves
A	<i>Popillia japonica</i>	Japanese beetle	07/27	KY	ALA	aircraft	Blankenship
A	<i>Popillia japonica</i>	Japanese beetle	07/19	KY	LAX	aircraft	Hooper/Ogoke
A	<i>Popillia japonica</i>	Japanese beetle	07/21	KY	LAX	aircraft	Drake
A	<i>Popillia japonica</i>	Japanese beetle	07/07	KY	SBD	aircraft	Shankland
A	<i>Popillia japonica</i>	Japanese beetle	07/29	KY	ALA	aircraft	Blankenship
A	<i>Popillia japonica</i>	Japanese beetle	07/19	KY	LAX	aircraft	Blankenship
A	<i>Popillia japonica</i>	Japanese beetle	07/22	MD	FRE	aircraft	Ogoke
A	<i>Popillia japonica</i>	Japanese beetle	07/20	IL	LAX	aircraft	Blankenship
A	<i>Popillia japonica</i>	Japanese beetle	07/22	OH	LAX	aircraft	Drake/Evans
A	<i>Popillia japonica</i>	Japanese beetle	06/29	KY	SBD	aircraft	

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>County</u>	<u>Host</u>	<u>Date</u>	<u>Origin</u>	<u>Collector(s)</u>
A	<i>Popillia japonica</i>	Japanese beetle	LAX	Canada?	07/23		
A	<i>Popillia japonica</i>	Japanese beetle	SBD	aircraft	07/13	NJ	Hooper
A	<i>Popillia japonica</i>	Japanese beetle	SBD	aircraft	07/28	KY	Velten/Drake
A	<i>Popillia japonica</i>	Japanese beetle	LAX	aircraft	07/28	KY	Velten
A	<i>Popillia japonica</i>	Japanese beetle	SBD	aircraft	07/06	KY	Ison
A	<i>Popillia japonica</i>	Japanese beetle	SBD	aircraft	07/29	KY	Drake
A	<i>Popillia japonica</i>	Japanese beetle	ALA	aircraft	07/07	NY	Shankland
A	<i>Popillia japonica</i>	Japanese beetle	SMT	aircraft	07/27	KY	Blackiston
A	<i>Popillia japonica</i>	Japanese beetle	ALA	aircraft	07/28	KY	Cutler
A	<i>Popillia japonica</i>	Japanese beetle	ALA	aircraft	07/28	KY	Gonsalves
A	<i>Popillia japonica</i>	Japanese beetle	ALA	aircraft	07/18	KY	Gonsalves
A	<i>Popillia japonica</i>	Japanese beetle	SMT	aircraft	07/15	WA	Whitaker
A	<i>Popillia japonica</i>	Japanese beetle	LAX	aircraft	08/05	KY	Onoike/Umemoto
A	<i>Popillia japonica</i>	Japanese beetle	LAX	aircraft	08/11	NJ	Hooper
A	<i>Popillia japonica</i>	Japanese beetle	SAC	aircraft	08/22	MO	Weiner
A	<i>Popillia japonica</i>	Japanese beetle	LAX	automobile	07/19	HI	Koller
A	<i>Popillia japonica</i>	Japanese beetle	LAX	automobile	08/16	HI	Koller
A	<i>Popillia japonica</i>	Japanese beetle	LAX	automobile	08/03	HI	Koller
A	<i>Popillia japonica</i>	Japanese beetle	SBD	aircraft	06/29	NJ	Drake/Evans
A	<i>Popillia japonica</i>	Japanese beetle	SBD	aircraft	06/28	KY	Drake/Evans
Q	<i>Protaetia fusca</i>	mango flower beetle	LAX	aircraft	06/29	NY	Ogoko
Q	<i>Protaetia fusca</i>	mango flower beetle	LAX	aircraft	06/27	NY	Hooper
A	<i>Protaetia fusca</i>	mango flower beetle	SDG	Mangifera sp.	08/02	Mexico	Meade
A	<i>Rhizotrogus majalis</i>	European chafer	SDG	Mangifera sp.	08/13	Mexico	Reusche
A	<i>Rhizotrogus majalis</i>	European chafer	SDG	Mangifera sp.	08/10	Haiti	Buerer
A	<i>Rhizotrogus majalis</i>	European chafer	SDG	Mangifera sp.	07/14	HI	Danker
A	<i>Rhizotrogus majalis</i>	European chafer	SDG	taro root	06/27	HI	Rabe
A	<i>Anastrepha ludens</i>	Mexican fruit fly	SDG	Amnona muricata	07/20	Mexico	Meade
A	<i>Anastrepha ludens</i>	Mexican fruit fly	SDG	Amnona muricata	07/27	Mexico	Meade
A	<i>Anastrepha obliqua</i>	West Indian fruit fly	SDG	Amnona muricata	06/27	HI	Meade
A	<i>Dacus dorsalis</i>	Oriental fruit fly	SDG	Amnona muricata	07/14	HI	Meade
Q	<i>Eumerus aurifrons</i>	an exotic bulb fly	SDG	Amnona muricata	06/27	HI	Meade
A	<i>Toxotrypana curvicauda</i>	papaya fruit fly	SDG	Amnona muricata	07/20	Mexico	Meade
A	<i>Toxotrypana curvicauda</i>	papaya fruit fly	SDG	Amnona muricata	07/27	Mexico	Meade
A	<i>Toxotrypana curvicauda</i>	papaya fruit fly	SDG	Amnona muricata	08/21	Mexico	Meade
A	<i>Toxotrypana curvicauda</i>	papaya fruit fly	SDG	Amnona muricata	08/18	Mexico	Meade
A	<i>Toxotrypana curvicauda</i>	papaya fruit fly	SDG	Amnona muricata	08/10	Mexico	Meade
A	<i>Toxotrypana curvicauda</i>	papaya fruit fly	SDG	Amnona muricata	08/11	Mexico	Meade
A	<i>Toxotrypana curvicauda</i>	papaya fruit fly	SDG	Amnona muricata	08/11	Mexico	Meade
B	<i>Bradybaena similaris</i>	a snail	LAX	Ficus benjamina	06/14	HI	Hynes
B	<i>Bradybaena similaris</i>	a snail	SDG	papaya	06/15	HI	Buerer
B	<i>Bradybaena similaris</i>	a snail	SDG	papaya	07/18	FL	Desserich
Q	<i>Vaginulus plebius</i>	a slug	SDG	Ficus elastica	08/26	HI	Buerer
Q	<i>Veronicella sp.</i>	a slug	SMT	Cordyline terminalis	08/03	HI	Runkle/Pusag
Q	<i>Zachrysia provisoria</i>	a snail	SDG	potted plants	08/25	FL	Avery
Q	<i>Copiosoma xanthogramma</i>	black stink bug	VEN	Cycas revoluta	08/01	HI	Romero

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Q	<i>Lygus</i> sp.	a lygus bug	08/30	HI	LAX	automobile	Koller
Q	<i>Nysius</i> sp.	a seed bug	06/13	HI	LAX	taro root	Rabe
Q	<i>Nysius</i> sp.	a seed bug	08/23	HI	LAX	automobile	Koller
A	<i>Abraialispis palmae</i>	a tropical palm scale	07/11	HI	SMT	<i>Pholidodendron</i> sp.	Buerer
Q	<i>Acanthoconia cornica</i>	a planthopper	08/17	PA	SBA	barbecue	Janssen
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	06/24	HI	ALA	ti leaves	Gee
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	06/29	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	06/29	HI	SDG	Leaves	Ginsky
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	06/15	HI	SCL	ti leaves	Maggi
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	06/29	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	06/16	HI	SMT	<i>Anthurium</i> sp.	Buerer
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/07	HI	ALA	<i>Cordyline terminalis</i>	Blumenthal
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/12	HI	LAX	lalot	Romero
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/14	HI	LAX	herb leaves	Hansen
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/16	HI	SFO	hala leaves	Papilli
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/18	HI	ALA	<i>Cordyline terminalis</i>	Flynn
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/19	HI	SMT	<i>Monstera</i> sp.	Gee
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	05/18	HI	SDG	areca palm	Buerer
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/20	HI	ALA	ti leaves	Hansen
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/20	HI	ALA	ti leaves	Hansen
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/23	HI	LAX	lalot	Olson
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/26	HI	SMT	<i>Monstera</i> sp.	Ginsky
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/27	HI	SDG	areca palm	Musso
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	07/27	HI	ALA	ti leaves	Musso
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/01	HI	LAX	lalot	Romero
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/04	HI	LAX	lalot	Romero
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/13	HI	LAX	<i>Monstera</i> sp.	Papilli
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/04	HI	LAX	beetle leaf	Romero/Nelson
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/15	HI	SMT	<i>Linum</i> sp.	Buerer
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/17	HI	SMT	<i>Linum</i> sp.	Buerer
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/17	HI	LAX	<i>Cordyline terminalis</i>	Romero
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/17	HI	LAX	palm	Romero
Q	<i>Aleurodicus dispersus</i>	spiralizing whitefly	08/22	HI	SMT	<i>Anthurium</i> sp.	Buerer
Q	<i>Aleurodicus dispersus</i>	anthurium whitefly	05/18	HI	SMT	cut flowers	Czamecki
Q	<i>Aleurodicus dispersus</i>	anthurium whitefly	07/05	HI	ALA	<i>Anthurium</i> sp.	Buerer
Q	<i>Aleurodicus dispersus</i>	anthurium whitefly	08/18	HI	SMT	<i>Anthurium</i> sp.	Blumenthal
Q	<i>Aleurodicus dispersus</i>	anthurium whitefly	08/22	HI	SMT	<i>Anthurium</i> sp.	Czamecki
Q	<i>Aleurodicus dispersus</i>	anthurium whitefly	08/26	HI	SMT	<i>Anthurium</i> sp.	Czamecki
B	<i>Aonidiella aurantii</i>	California red scale	07/19	Italy	LAX	citrus	Koller

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Q	<i>Aonidiella orientalis</i>	oriental scale	08/09	Puerto Rico	SMT Cocos nucifera	Czamecki
A	<i>Aspidioidus destructor</i>	coconut scale	06/29	HI	SMT Heliconia sp.	Buerer
A	<i>Aspidioidus destructor</i>	coconut scale	08/04	HI	LAX Cocos nucifera	Olson
A	<i>Aspidioidus destructor</i>	coconut scale	06/29	HI	SMT Heliconia sp.	Buerer
A	<i>Aspidioidus destructor</i>	coconut scale	05/18	HI	SMT palm	Buerer
A	<i>Aspidioidus destructor</i>	coconut scale	08/13	HI	LAX Monstera sp.	Papilli
A	<i>Aspidioidus destructor</i>	coconut scale	08/30	FL	SDG areca palm	Desserich
A	<i>Aspidioidus destructor</i>	coconut scale	08/22	HI	SMT palm	Buerer
A	<i>Aspidioidus destructor</i>	coconut scale	08/20	FL	SDG areca palm	Desserich
Q	<i>Aspidioidus sp.</i>	an armored scale	06/28	HI	SMT Heliconia sp.	Buerer
Q	<i>Aspidioidus sp.</i>	an armored scale	06/28	HI	SMT Heliconia sp.	Buerer
Q	<i>Asterolecanium sp.</i>	a pit scale	07/11	HI	SMT Philodendron sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	06/23	HI	SMT palm	Czamecki
A	<i>Ceroplastes rubens</i>	red wax scale	05/12	HI	SMT Monstera sp.	Buerer/Marion
A	<i>Ceroplastes rubens</i>	red wax scale	06/28	HI	SMT Zingiber sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	06/30	HI	SMT Monstera sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	06/28	HI	SMT Zingiber sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	06/16	HI	SMT Monstera sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	07/05	HI	SMT Zingiber sp.	Czamecki
A	<i>Ceroplastes rubens</i>	red wax scale	06/14	HI	SMT Zingiber sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	07/08	HI	SMT Philodendron sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	07/08	HI	SMT Dieffenbachia sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	07/11	HI	SMT Zingiber sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	07/14	HI	SMT Zingiber sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	06/14	HI	SMT Pathos sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	07/08	HI	SMT Monstera sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	07/01	HI	SMT Aglaonema sp.	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	08/18	HI	SMT flower and leaf lei	Buerer
A	<i>Ceroplastes rubens</i>	red wax scale	08/10	HI	SAC Alyxia loivaeformis	Jensen
A	<i>Ceroplastes rubens</i>	red wax scale	08/16	HI	ELD nursery stock	Stewart
A	<i>Ceroplastes rubens</i>	red wax scale	08/25	HI	SMT Monstera sp.	Czamecki
Q	<i>Ceroplastes sp.</i>	a wax scale	07/20	HI	SMT Monstera sp.	Czamecki
Q	<i>Ceroplastes sp.</i>	a wax scale	07/21	HI	SMT Dieffenbachia sp.	Czamecki
Q	<i>Ceroplastes sp.</i>	a wax scale	07/21	HI	SMT Dieffenbachia sp.	Czamecki
Q	<i>Ceroplastes sp.</i>	a wax scale	07/25	HI	SMT Zingiber sp.	Ginsky
A	<i>Clavaspis herculeana</i>	herculeana scale	06/20	HI	SDG Plumeria sp.	Czamecki
Q	<i>Coccus acutissimus</i>	slender soft scale	06/22	HI	SMT cycad	Czamecki
Q	<i>Coccus acutissimus</i>	slender soft scale	06/16	HI	SMT sago palm	Buerer
Q	<i>Coccus acutissimus</i>	slender soft scale	07/13	HI	SMT sago palm	Buerer
Q	<i>Litchi chinensis</i>	slender soft scale	08/05	HI	SDG Litchi chinensis	Ginsky

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Q	<i>Coccus acutissimus</i>	slender soft scale	08/03	HI	SDG	<i>Litchi chinensis</i>	Ginsky/Moss
Q	<i>Coccus</i> sp.	a soft scale	07/20	HI	SMT	<i>Zingiber</i> sp.	Czarnocki
Q	<i>Coccus viridis</i>	green scale	06/28	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Coccus viridis</i>	green scale	06/28	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Coccus viridis</i>	green scale	07/14	HI	SMT	<i>Zingiber</i> sp.	Czarnocki
Q	<i>Coccus viridis</i>	green scale	07/11	HI	SMT	<i>Zingiber</i> sp.	Czarnocki
Q	<i>Coccus viridis</i>	green scale	07/13	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Coccus viridis</i>	green scale	07/13	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Coccus viridis</i>	green scale	07/14	HI	SMT	<i>Zingiber</i> sp.	Czarnocki
Q	<i>Coccus viridis</i>	green scale	07/20	HI	SMT	<i>Monstera</i> sp.	Jensen
Q	<i>Coccus viridis</i>	green scale	07/25	HI	SMT	<i>Zingiber</i> sp.	Czarnocki
Q	<i>Coccus viridis</i>	green scale	08/10	HI	SAC	<i>Alyxia loivaeformis</i>	Romero
Q	<i>Coccus viridis</i>	green scale	08/17	HI	FRE	<i>Zingiber</i> sp.	Romero
Q	<i>Coccus viridis</i>	green scale	08/29	HI	LAX	<i>Zingiber</i> sp.	Buerer
Q	<i>Coccus viridis</i>	green scale	08/15	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Coccus viridis</i>	green scale	08/08	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/23	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/23	HI	SMT	<i>Pothos</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/23	HI	SMT	<i>Dieffenbachia</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/22	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/23	HI	SMT	<i>Pothos</i> sp.	Czarnocki
Q	<i>Crenidorsum</i> sp.	a whitefly	06/29	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/21	HI	SMT	<i>Pothos</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/29	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/30	HI	SMT	<i>Pothos</i> sp.	Czarnocki
Q	<i>Crenidorsum</i> sp.	a whitefly	05/18	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/30	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	05/12	HI	SMT	<i>Anthurium</i> sp.	Buerer/Marion
Q	<i>Crenidorsum</i> sp.	a whitefly	07/14	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	06/14	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	07/14	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	07/08	HI	SMT	<i>Dieffenbachia</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	07/11	HI	SMT	<i>Philodendron</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	07/12	HI	SMT	<i>Monsiera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	07/08	HI	SMT	<i>Eipprennum aureum</i>	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	07/28	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	08/04	HI	SMT	<i>Philodendron</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	07/28	HI	SMT	<i>Dieffenbachia</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	08/04	HI	SMT	<i>Anthurium</i> sp.	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	08/22	HI	SMT	<i>Monstera</i> sp.	Buerer/Sandoval

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>County</u>	<u>Host</u>	<u>Origin</u>	<u>Collector(s)</u>
Q	<i>Crenidorsum</i> sp.	a whitefly	HI	SMT	HI	Buerer
Q	<i>Crenidorsum</i> sp.	a whitefly	HI	SMT	fern	Buerer
Q	<i>Dialeurodes</i> sp.	a whitefly	HI	SMT	<i>Schefflera</i> sp.	Buerer/Sandoval
Q	<i>Dysmicoccus alazon</i>	alazon mealybug	Mexico	SDG	palm	Ginsky
B	<i>Empoasca</i> sp.	a leafhopper	HI	SMT	<i>Cordyline terminalis</i>	Buerer
Q	<i>Ferrisia virgata</i>	striped mealybug	HI	SMT	<i>Ananas comosus</i>	Buerer
B	<i>Ferrisia virgata</i>	striped mealybug	HI	SMT	<i>Monstera</i> sp.	Buerer
B	<i>Ferrisia virgata</i>	striped mealybug	HI	SMT	<i>Cordyline terminalis</i>	Czarnocki
B	<i>Ferrisia virgata</i>	striped mealybug	HI	SMT	<i>Zingiber</i> sp.	Sandoval/Buerer
B	<i>Geococcus coffeae</i>	a soil mealybug	HI	LAX	<i>Chamadorea seufzii</i>	Kellam
Q	<i>Geococcus coffeae</i>	a soil mealybug	HI	LAX	<i>Chamaedorea seifrizii</i>	Kellam
Q	<i>Howardia biclavis</i>	mining scale	FL	LAX	<i>Ficus benjamina</i>	Calicchia
A	<i>Howardia biclavis</i>	mining scale	HI	LAX	<i>Ficus benjamina</i>	Kellam
A	<i>Howardia biclavis</i>	mining scale	FL	LAX	<i>Ficus benjamina</i>	Hynes
A	<i>Howardia biclavis</i>	mining scale	FL	LAX	<i>Ficus benjamina</i>	Calicchia
A	<i>Howardia biclavis</i>	mining scale	FL	LAX	<i>Ficus benjamina</i>	Hynes
A	<i>Howardia biclavis</i>	mining scale	FL	LAX	<i>Ficus benjamina</i>	Davis
A	<i>Howardia biclavis</i>	mining scale	FL	LAX	<i>Plumeria</i> sp.	Ginsky
A	<i>Howardia biclavis</i>	mining scale	HI	SMT	<i>Monstera</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Monstera</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Monstera</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Philodendron</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Monstera</i> sp.	Sesserica
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Monstera</i> sp.	Czarnocki
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Monstera</i> sp.	Buerer/Sandoval
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>areca palm</i>	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>cut reed?</i>	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>areca palm</i>	Buerer/Sandoval
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Monstera</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>palm</i>	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Linum</i> sp.	Buerer
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Heliconia</i> sp.	Buerer/Sandoval
A	<i>Ischnaspis longirostris</i>	black thread scale	HI	SMT	<i>Eipprennum aureum</i>	Buerer
A	<i>Klifia acuminatus</i>	acumate scale	HI	SMT	<i>Zingiber</i> sp.	Buerer
A	<i>Klifia acuminatus</i>	acumate scale	HI	SMT	<i>Pothos</i> sp.	Buerer
A	<i>Klifia acuminatus</i>	acumate scale	HI	SMT	<i>Alyxiz Loivaeformis?</i>	Czarnocki
A	<i>Klifia acuminatus</i>	acumate scale	HI	SMT	<i>Dieffenbachia</i> sp.	Kovarik
A	<i>Klifia acuminatus</i>	acumate scale	HI	SMT	<i>Dieffenbachia</i> sp.	Buerer
Q	<i>Laminicoccus pandani</i>	a pandanus mealybug	HI	ALA	<i>Dracaena</i> sp.	Gee/downer
B	<i>Lepidosaphes beckii</i>	purple scale	HI	SMT	<i>Alyxiz Loivaeformis?</i>	Czarnocki
B	<i>Lepidosaphes beckii</i>	purple scale	Japan	08/10	citrus	Koller

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
B	<i>Lepidosaphes gloverii</i>	glover scale	07/19	Italy	LAX	citrus	Koller
Q	<i>Lepidosaphes toktonis</i>	a cockerell scale	05/16	HI	SMT	Croton sp.	Buerer
A	<i>Lopholeucaspis cockerelli</i>	West Indian flatid	08/22	HI	SMT	<i>Heliconia</i> sp.	Buerer/Sandoval
Q	<i>Melormenis antillarum</i>	a planthopper	07/12	HI	SMT	Cordyline terminalis	Buerer
Q	<i>Melormenis</i> sp.	West Indian flatid	08/02	HI	SMT	fan palm	Buerer/Sandoval
Q	<i>Melormensis antillarium</i>	a leafhopper	06/29	HI	LAX	automobile	Rabe
Q	<i>Nesiphrosyne</i> sp.	a mealybug	07/06	HI	SMT	Cordyline terminalis	Czarnicki
Q	<i>Nipaecoccus</i> sp.	a mealybug	07/01	HI	SMT	<i>Heliconia</i> sp.	Buerer
Q	<i>Nipaecoccus</i> sp.	a mealybug	07/05	HI	SMT	cut flowers	Buerer
Q	<i>Nipaecoccus</i> sp.	a mealybug	07/06	HI	SMT	<i>Heliconia</i> sp.	Buerer
Q	<i>Nipaecoccus</i> sp.	a mealybug	07/01	HI	SMT	<i>raphis</i> palm	Buerer
Q	<i>Orchamoplatus mammaeferus</i>	croton whitefly	07/01	HI	ALA	<i>Alyxia loivaeformis</i>	Musso
Q	<i>Orchamoplatus mammaeferus</i>	croton whitefly	08/22	HI	SMT	Croton sp.	Buerer/Sandoval
Q	<i>Palmicultor</i> sp.	palm mealybug	07/14	HI	SON	palm	McCartney/Verno
Q	<i>Parlatoria pergandii</i>	a mealybug	07/27	HI	SMT	cut flax	Czarnicki
B	<i>Parlatoria proteus</i>	chaff scale	07/19	Italy	LAX	citrus	Koller
A	<i>Parlatoria proteus</i>	sansevieria scale	07/13	HI	SMT	sago palm	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/23	HI	SMT	<i>Pothos</i> sp.	Czarnicki
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/23	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/23	HI	SMT	<i>Pothos</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/22	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/21	HI	SMT	<i>Monstera</i> sp.	Czarnicki
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/29	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	05/18	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	05/12	HI	SMT	<i>Monstera</i> sp.	Buerer/Marion
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/29	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	06/30	HI	SMT	<i>Monstera</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/24	HI	SMT	Cordyline terminalis	Czarnicki
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/08	HI	SMT	<i>Heliconia</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/14	HI	SMT	foliage	Czarnicki
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/14	HI	SMT	<i>Epipremnum aureum</i>	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/14	HI	SMT	<i>Philodendron</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/14	HI	SMT	<i>Zingiber</i> sp.	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/08	HI	LAX	<i>Monstera</i> sp.	Popilli
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/11	HI	SMT	<i>Cordyline terminalis</i>	Czarnicki
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/12	HI	SMT	<i>Cordyline terminalis</i>	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	07/20	HI	SMT	<i>Monstera</i> sp.	Czarnicki
Q	<i>Pinnaspis buxi</i>	boxwood scale	08/04	HI	SMT	<i>Monstera</i> sp.	Buerer

Rating	Species	Common Name	County	Host	Date	Origin	Collector(s)
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	areca palm	07/28	HI	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	Cordyline terminalis	08/12	HI	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	Cordyline terminalis	08/10	HI	Buerer/Sandoval
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	palm	08/22	HI	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	Dracaena sp.	08/24	HI	Aby
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	Linum sp.	08/24	HI	Aby
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	palm	08/25	HI	Buerer
Q	<i>Pinnaspis buxi</i>	boxwood scale	SMT	Monsiera sp.	08/22	HI	Buerer
Q	<i>Pinnaspis sp.</i>	an armored scale	SMT	Cordyline terminalis	08/08	HI	Czamecki
Q	<i>Pinnaspis sp.</i>	an armored scale	SMT	Heliconia sp.	07/19	HI	Buerer
Q	<i>Pinnaspis sp.</i>	an armored scale	SMT	Linum sp.	08/04	HI	Buerer
Q	<i>Pinnaspis sp.</i>	an armored scale	SMT	Strelitzia	07/22	HI	Czamecki
Q	<i>Pinnaspis sp.</i>	an armored scale	SMT	Dracaena sp.	08/24	HI	Aby
Q	<i>Pinnaspis sp.</i>	an armored scale	SMT	Musa sp.	08/22	HI	Buerer/Sandoval
Q	<i>Pinnaspis sp.</i>	lesser snow scale	SMT	Strelitzia	06/22	HI	Buerer
Q	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	06/22	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	06/23	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Strelitzia	06/21	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	06/23	HI	Czamecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Strelitzia	06/21	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	cycad	06/21	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Strelitzia	08/08	HI	Czamecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia terminalis	07/01	HI	Czamecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	06/17	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	07/01	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	06/16	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Strelitzia	06/30	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Cordyline terminalis	07/05	HI	Czamecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Zingiber sp.	08/08	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	LAX	Cycas revoluta	07/06	HI	Kellam
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Cordyline terminalis	08/05	HI	Czamecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	07/08	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia terminalis	08/06	HI	Czamecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	07/08	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	sago palm	06/16	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	Heliconia sp.	07/01	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	LAX	Zingiber sp.	06/06	HI	Hansen
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT	sago palm	07/01	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	SMT		05/18	HI	Buerer

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>County</u>	<u>Host</u>	<u>Collector(s)</u>
A	<i>Pinnaspis strachani</i>	lesser snow scale	05/18	HI	SMT Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	07/01	HI	SMT Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	05/15	HI	SMT Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	07/08	HI	SFO Flynn
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/04	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/02	HI	Buerer/Sandoval
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/01	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/04	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/04	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/11	HI	Czarnecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/18	HI	Ginsky
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/29	HI	Buerer/Sandoval
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/26	HI	Czarnecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/19	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/29	HI	Buerer/Sandoval
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/23	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/22	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/24	HI	Czarnecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/26	HI	Romero
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/17	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/15	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/22	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	05/13	HI	Pongo
A	<i>Pinnaspis strachani</i>	lesser snow scale	08/12	HI	Czarnecki
A	<i>Pinnaspis strachani</i>	lesser snow scale	06/23	HI	Buerer
A	<i>Pinnaspis strachani</i>	lesser snow scale	06/22	HI	Buerer
Q	<i>Pinnaspis uniloba</i>	unilobed scale	06/22	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/23	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/23	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/28	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/28	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/29	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/29	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/21	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/01	HI	SMT Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/17	HI	SMT Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/17	HI	SMT Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/28	HI	SMT Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/16	HI	SMT Buerer

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/29	HI	SMT	<i>Strelitzia</i>	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/17	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/16	HI	SMT	<i>Anthurium</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/28	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	05/16	HI	SMT	palm	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/29	HI	SMT	<i>Strelitzia</i>	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/05	HI	SMT	<i>Strelitzia</i>	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/21	HI	SMT	<i>Strelitzia</i>	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/16	HI	SMT	sago palm	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/05	HI	SMT	cut flowers	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	08/05	HI	SMT	<i>Strelitzia</i>	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	08/08	FL	SAC	areca palm	Bianchi
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/14	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	areca palm	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	<i>Strelitzia</i>	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	<i>Strelitzia</i>	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	<i>Strelitzia</i>	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/14	HI	SMT	<i>Strelitzia</i>	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/08	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/11	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/13	HI	ALA	maile lei	Musso
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/18	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	08/05	HI	SMT	<i>Alyxia loivaeformis</i>	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/13	HI	SMT	<i>Heliconia</i> sp.	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	06/13	HI	SMT	<i>Heliconia</i> sp.	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/19	HI	SMT	<i>Cordyline terminalis</i>	Olson
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	08/04	HI	LAX	<i>Cocos nucifera</i>	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/01	HI	SMT	<i>Anthurium</i> sp.	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/20	HI	SMT	<i>Heliconia</i> sp.	Hansen
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/20	HI	SMT	<i>Strelitzia</i>	Hansen
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/20	HI	SMT	<i>Strelitzia</i>	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/20	HI	LAX	lalot	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/20	HI	SMT	palm	Hansen
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	05/18	HI	SMT	<i>Strelitzia</i>	Hansen
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/01	HI	LAX	lalot	Czamecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/20	HI	LAX	lalot	Hansen
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/20	HI	LAX	lalot	Hansen
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	07/27	HI	SMT	<i>Heliconia</i> sp.	Czamecki

Rating	Species	Common Name	County	Host	Date	Origin	Collector(s)
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/04	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/04	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	LAX	cut flowers	07/23	HI	Olson
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Strelitzia</i>	07/27	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Strelitzia</i>	08/03	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Strelitzia</i>	07/28	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Strelitzia</i>	08/04	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	areca palm	07/25	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/28	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/25	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/28	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/28	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/25	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/25	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/28	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/28	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/25	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/25	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/28	HI	Gee
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	07/25	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Mangifera</i> sp.	07/25	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/01	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SDG	cut greens	07/25	HI	Ginsky
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Alixia loivaeformis</i>	08/01	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SBD	<i>Strelitzia</i>	08/01	HI	Musso
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SDG	cut greens	07/25	HI	Nash
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	ALA	<i>Alixia loivaeformis</i>	07/26	HI	Ginsky
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>areca palm</i>	07/28	HI	Gee
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	ALA	<i>Strelitzia</i>	07/25	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>areca palm</i>	07/26	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Mangifera</i> sp.	07/25	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/01	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SDG	cut greens	07/25	HI	Ginsky
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Alixia loivaeformis</i>	08/12	HI	Czarnecki
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	ALA	<i>Alixia loivaeformis</i>	08/08	HI	Musso
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/17	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/17	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Cocos nucifera</i>	08/10	HI	Buerer/Sandoval
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/10	HI	Buerer/Sandoval
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/10	HI	Dauts
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SAC	<i>Alixia loivaeformis</i>	08/10	HI	Jensen
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/24	HI	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SDG	<i>areca palm</i>	08/17	FL	Desserich
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/10	FL	Devaney
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	LAX	<i>areca palm</i>	08/29	FL	Buerer
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	YUB	<i>Mangifera</i> sp.	08/26	HI	Romero/Nelson
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>flower/foliage lei</i>	08/24	HI	Buerer/Sandoval
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	LAX	<i>areca palm</i>	08/29	HI	Desserich
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SMT	<i>Heliconia</i> sp.	08/30	FL	Olson
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	SDG	<i>areca palm</i>	08/24	HI	Cocos nucifera
A	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	LAX	<i>Cocos nucifera</i>			

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
A	Pseudaulacaspis cockerelli	magnolia white scale	08/22	HI	SMT	arcca palm	Czarniecki
A	Pseudaulacaspis cockerelli	magnolia white scale	08/22	HI	SMT	Heliconia sp.	Buerer/Sandova
A	Pseudaulacaspis cockerelli	magnolia white scale	08/15	HI	SMT	Strelitzia	Buerer
A	Pseudaulacaspis cockerelli	magnolia white scale	08/22	HI	SDG	Plumeria sp.	Walsh
A	Pseudaulacaspis cockerelli	magnolia white scale	08/24	HI	ALA	Cocos nucifera	Gee
A	Pseudaulacaspis cockerelli	magnolia white scale	07/19	HI	SMT	Heliconia sp.	Buerer
A	Pseudaulacaspis cockerelli	magnolia white scale	08/22	HI	SMT	Heliconia sp.	Buerer
A	Pseudaulacaspis cockerelli	magnolia white scale	08/26	HI	SMT	Heliconia sp.	Buerer/Sandova
A	Pseudaulacaspis cockerelli	magnolia white scale	08/25	HI	SMT	Heliconia sp.	Musso
A	Pseudaulacaspis cockerelli	magnolia white scale	08/19	HI	ALA	Alyxia loivaeformis	Buerer/Sandova
A	Pseudaulacaspis cockerelli	magnolia white scale	08/25	HI	SMT	Zingiber sp.	Buerer
A	Pseudaulacaspis cockerelli	magnolia white scale	08/25	HI	SMT	Heliconia sp.	Buerer
A	Pseudaulacaspis cockerelli	magnolia white scale	08/25	HI	SMT	Strelitzia	Buerer/Sandova
A	Pseudaulacaspis cockerelli	magnolia white scale	06/28	HI	SMT	Zingiber sp.	Buerer
A	Pseudaulacaspis cockerelli	magnolia white scale	06/28	HI	SMT	Zingiber sp.	Buerer
A	Pseudaulacaspis cockerelli	magnolia white scale	06/22	HI	SMT	Zingiber sp.	Czarniecki
A	Pseudaulacaspis cockerelli	magnolia white scale	06/27	HI	SDG	Lycopodium sp.	Slotz/Walsh
A	Pseudaulacaspis cockerelli	magnolia white scale	06/27	HI	SDG	Lycopodium sp.	Slotz/Walsh
A	Pseudaulacaspis cockerelli	magnolia white scale	06/14	HI	ALA	Lycopodium sp.	Gee
A	Pseudaulacaspis cockerelli	magnolia white scale	07/11	HI	SDG	Lycopodium sp.	Moss/Walsh
A	Pseudococcus citricolus	a mealybug	07/01	HI	SMT	raphis palm	Buerer
Q	Pseudococcus citricolus	a mealybug	07/06	HI	SMT	Anthurium sp.	Buerer
Q	Pseudococcus citricolus	a mealybug	07/06	HI	SMT	Anthurium/ii green	Buerer
B	Pseudococcus elisae	elisae mealybug	08/29	HI	SMT	Aglaonema sp.	Buerer/Sandova
Q	Pseudococcus lycopodii	club moss mealybug	06/21	HI	SMT	Zingiber sp.	Buerer
Q	Pseudococcus lycopodii	club moss mealybug	06/26	HI	FRE	Zingiber sp.	Romero
Q	Pseudococcus lycopodii	club moss mealybug	06/21	HI	SMT	Zingiber sp.	Buerer
Q	Pseudococcus lycopodii	club moss mealybug	06/18	HI	LAX	Zingiber sp.	Hansen
Q	Pseudococcus sp.	a mealybug	06/28	HI	SMT	Zingiber sp.	Buerer
Q	Pseudococcus sp.	a mealybug	06/29	HI	SMT	Zingiber sp.	Buerer
Q	Pseudococcus sp.	a mealybug	06/27	HI	SMT	Zingiber sp.	Czarniecki
Q	Pseudococcus sp.	a mealybug	06/29	HI	LAX	Zingiber sp.	Hansen
A	Polvinaria psidii	green shield scale	06/29	HI	SMT	Zingiber sp.	Czarniecki
A	Polvinaria psidii	green shield scale	06/22	HI	LAX	Zingiber sp.	Hansen
A	Polvinaria psidii	green shield scale	06/28	HI	SMT	Zingiber sp.	Buerer
A	Polvinaria psidii	green shield scale	06/29	HI	SMT	Zingiber sp.	Buerer
A	Polvinaria psidii	green shield scale	06/29	HI	SMT	Zingiber sp.	Czarniecki
A	Polvinaria psidii	green shield scale	06/22	HI	LAX	Zingiber sp.	Hansen
A	Polvinaria psidii	green shield scale	06/28	HI	SMT	Zingiber sp.	Buerer
A	Polvinaria psidii	green shield scale	05/18	HI	SMT	Zingiber sp.	Buerer
A	Polvinaria psidii	green shield scale	06/16	HI	SMT	Zingiber sp.	Czarniecki
A	Polvinaria psidii	green shield scale	06/29	HI	SMT	Zingiber sp.	Buerer
A	Polvinaria psidii	green shield scale	06/29	HI	SMT	Zingiber sp.	Buerer
A	Polvinaria psidii	green shield scale	06/20	HI	SMT	Zingiber sp.	Czarniecki

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>Date</u>	<u>Origin</u>	<u>County</u>	<u>Host</u>	<u>Collector(s)</u>
A	<i>Pulvinaria psidii</i>	green shield scale	06/29	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	06/16	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/07	HI	LAX	Zingiber sp.	Romero
A	<i>Pulvinaria psidii</i>	green shield scale	06/11	HI	FRE	Zingiber sp.	Pupini
A	<i>Pulvinaria psidii</i>	green shield scale	07/13	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/05	HI	SMT	Zingiber sp.	Czamecki
A	<i>Pulvinaria psidii</i>	green shield scale	07/14	HI	SMT	Zingiber sp.	Czamecki
A	<i>Pulvinaria psidii</i>	green shield scale	06/14	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/14	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/13	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/05	HI	SMT	Zingiber sp.	Czamecki
A	<i>Pulvinaria psidii</i>	green shield scale	06/14	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/14	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/13	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/05	HI	SMT	Zingiber sp.	Czamecki
A	<i>Pulvinaria psidii</i>	green shield scale	06/14	HI	SMT	Pathos sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/14	HI	SMT	ginger	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	06/14	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	07/08	HI	SMT	Dieffenbachia sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/08	HI	SMT	Dieffenbachia sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	06/13	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	06/13	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	06/13	HI	SMT	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	06/08	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	06/06	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	05/17	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	07/19	HI	VEN	Zingiber sp.	McClure
A	<i>Pulvinaria psidii</i>	green shield scale	06/06	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	05/12	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	08/08	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/20	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	07/20	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	07/21	HI	SMT	Zingiber sp.	Czamecki
A	<i>Pulvinaria psidii</i>	green shield scale	07/20	HI	LAX	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	07/20	HI	SMT	Zingiber sp.	Hansen
A	<i>Pulvinaria psidii</i>	green shield scale	05/16	HI	FRE	Zingiber sp.	Romero
A	<i>Pulvinaria psidii</i>	green shield scale	07/21	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	05/17	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	07/22	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/04	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/04	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/03	HI	SMT	ginger/ft	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/04	HI	SMT	Zingiber sp.	Buerer
A	<i>Pulvinaria psidii</i>	green shield scale	08/04	HI	SMT	Zingiber sp.	Buerer

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>County</u>	<u>Host</u>	<u>Collector(s)</u>
A	<i>Pulvinaria psidii</i>	green shield scale	07/23	HI	LAX Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	07/25	HI	LAX Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	07/29	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	07/29	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	07/25	HI	SMT Heliconia sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/12	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/15	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/13	HI	LAX Monstera sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/15	HI	LAX Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/15	HI	LAX Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/17	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/09	HI	LAX Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/18	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/17	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/08	HI	LAX
A	<i>Pulvinaria psidii</i>	green shield scale	08/29	HI	Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/29	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/18	HI	LAX Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/17	HI	FRE Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/19	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/23	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/26	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/29	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/26	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/29	HI	LAX Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/25	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/25	HI	SMT Zingiber sp.
A	<i>Pulvinaria psidii</i>	green shield scale	08/22	HI	SMT Zingiber sp.
B	<i>Siphanta acuta</i>	torpedo bug	05/11	HI	ALA cut flowers
B	<i>Siphanta acuta</i>	torpedo bug	06/14	HI	SMT Monstera sp.
B	<i>Siphanta acuta</i>	torpedo bug	07/13	HI	SMT Monstera sp.
B	<i>Siphanta acuta</i>	torpedo bug	07/07	HI	ALA Cordyline terminalis
B	<i>Siphanta acuta</i>	torpedo bug	07/05	HI	SJQ Cordyline terminalis
B	<i>Siphanta acuta</i>	torpedo bug	06/14	HI	ALA Bamusa
B	<i>Siphanta acuta</i>	torpedo bug	07/18	HI	SMT cut flowers

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>Date</u>	<u>Origin</u>	<u>County</u>	<u>Host</u>	<u>Collector(s)</u>
B	<i>Siphanta acuta</i>	torpedo bug	07/11	HI	SMT	Protea sp.	Czamecki
B	<i>Siphanta acuta</i>	torpedo bug	07/26	HI	ALA	Protea sp.	Gee
B	<i>Siphanta acuta</i>	torpedo bug	07/25	HI	SMT	Cordyline terminalis	Czamecki
B	<i>Siphanta acuta</i>	torpedo bug	08/15	HI	SMT	Protea sp.	Sandoval
B	<i>Siphanta acuta</i>	torpedo bug	08/17	HI	ALA	Protea sp.	Blumenthal
B	<i>Siphanta acuta</i>	torpedo bug	08/10	HI	SMT	Protea sp.	Buerer/Sandoval
B	<i>Siphanta acuta</i>	torpedo bug	08/22	HI	SMT	palm	Buerer
Q	<i>Anoplolepis longipes</i>	longlegged ant	07/12	HI	FRE		Romero
Q	<i>Anoplolepis longipes</i>	longlegged ant	07/21	HI	SMT	cut flowers	Czamecki
Q	<i>Anoplolepis longipes</i>	longlegged ant	07/21	HI	SMT	cut flowers	Czamecki
Q	<i>Anoplolepis longipes</i>	longlegged ant	08/12	HI	LAX	Zingiber sp.	Romero
Q	<i>Anoplolepis longipes</i>	longlegged ant	08/11	HI	SMT	Zingiber sp.	Buerer/Sandoval
Q	<i>Monomorium</i> sp.	an ant	07/05	HI	VEN	Cocos nucifera	McClure
Q	<i>Pheidole megacephala</i>	big-headed ant	06/28	HI	SMT	Zingiber sp.	Buerer
Q	<i>Pheidole megacephala</i>	big-headed ant	06/28	HI	SMT	Zingiber sp.	Buerer
Q	<i>Pheidole megacephala</i>	big-headed ant	07/18	HI	SMT	Zingiber sp.	Buerer
Q	<i>Pheidole megacephala</i>	big-headed ant	07/08	HI	SFO	Heliconia sp.	Flynn
Q	<i>Pheidole megacephala</i>	big-headed ant	06/13	HI	LAX	papaya	Rabe
Q	<i>Pheidole megacephala</i>	big-headed ant	07/11	HI	FRE	fruit	Woody
Q	<i>Pheidole megacephala</i>	big-headed ant	07/18	HI	SMT	Zingiber sp.	Buerer
Q	<i>Pheidole megacephala</i>	big-headed ant	07/23	HI	LAX	Zingiber sp.	Olson
Q	<i>Pheidole megacephala</i>	big-headed ant	07/20	HI	SMT	Anthurium sp.	Czamecki
Q	<i>Pheidole megacephala</i>	big-headed ant	07/27	HI	SMT	Anthurium sp.	Czamecki
Q	<i>Pheidole megacephala</i>	big-headed ant	07/12	HI	SDG	orchids	Walsh
Q	<i>Pheidole megacephala</i>	big-headed ant	08/05	HI	SMT	cut flowers	Buerer
Q	<i>Pheidole megacephala</i>	big-headed ant	08/05	HI	SDG	lychee	Ginsky
Q	<i>Pheidole megacephala</i>	big-headed ant	08/22	HI	SMT	cut flowers	Czamecki
Q	<i>Pheidole megacephala</i>	big-headed ant	08/23	HI	LAX	automobile	Azhar
Q	<i>Pheidole megacephala</i>	big-headed ant	08/26	HI	SMT	cut flowers	Czamecki
Q	<i>Pheidole megacephala</i>	big-headed ant	08/13	HI	LAX	cut flowers	Papilli
Q	<i>Pheidole megacephala</i>	big-headed ant	08/17	HI	SMT	Heliconia sp.	Buerer/Sandoval
Q	<i>Pheidole megacephala</i>	big-headed ant	08/09	HI	LAX	soil	Koller
Q	<i>Pheidole megacephala</i>	big-headed ant	08/18	HI	SMT	orchids	Buerer
Q	<i>Pheidole megacephala</i>	big-headed ant	08/11	HI	SMT	cut flowers	Czamecki
Q	<i>Pheidole megacephala</i>	big-headed ant	08/29	HI	SMT	cut flowers	Czamecki
Q	<i>Pheidole sp.</i>	an ant	06/15	HI	SMT	raphis palm	Buerer
A	<i>Solenopsis invicta</i>	red imported fire ant	07/27	MS	LAX	household goods	Simon
A	<i>Solenopsis invicta</i>	red imported fire ant	08/24	TX/AZ	CCA	asphalt shingles	Ziegler
A	<i>Solenopsis</i> sp.	an ant	08/24	FL	SMT	cobra lily, cut	Czamecki
Q	<i>Tapinoma melanocephalum</i>	an ant	06/17	HI	ALA	bamboo vase	Gee

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>Collector(s)</u>	<u>County</u>	<u>Host</u>	<u>Date</u>	<u>Origin</u>
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Q	<i>Tapinoma melanocephalum</i>	black-headed ant	Buerer/Sandoval	SMT	<i>Heliconia</i> sp.	08/22	HI
Q	<i>Tapinoma melanocephalum</i>	black-headed ant	Buerer/Sandoval	SMT	<i>Heliconia</i> sp.	08/22	HI
Q	<i>Tapinoma melanocephalum</i>	black-headed ant	Buerer/Sandoval	SMT	<i>Heliconia</i> sp.	08/22	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	<i>Zingiber</i> sp.	07/05	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>Zingiber</i> sp.	06/28	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>Zingiber</i> sp.	06/28	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	<i>Zingiber</i> sp.	07/05	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>Zingiber</i> sp.	07/14	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>Zingiber</i> sp.	06/16	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>Zingiber</i> sp.	07/05	HI
Q	<i>Technomyrmex albipes</i>	an ant	Romero	FRE	cut flowers	07/12	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	cut flowers	07/19	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	sago palm	07/21	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	cut flowers	07/21	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	sago palm	07/21	HI
Q	<i>Technomyrmex albipes</i>	an ant	Ginsky/moss	SDG	<i>Litchi chinensis</i>	08/03	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer/Sandoval	SMT	<i>Heliconia</i> sp.	08/22	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>ginger/ii</i>	08/25	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer/Sandoval	SMT	<i>Heliconia</i> sp.	08/22	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>Zingiber</i> sp.	08/23	HI
Q	<i>Technomyrmex albipes</i>	an ant	Romero	FRE	cut flowers	08/22	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	<i>Heliconia</i> sp.	08/25	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer/Sandoval	SMT	<i>Heliconia</i> sp.	08/12	HI
Q	<i>Technomyrmex albipes</i>	an ant	Buerer	SMT	<i>Zingiber</i> sp.	08/25	HI
Q	<i>Technomyrmex albipes</i>	an ant	Czamecki	SMT	<i>Heliconia</i> sp.	08/10	HI
Q	<i>Technomyrmex albipes</i>	a drywood termite	Buerer/Sandoval	SFO	acacia koa wood	08/03	HI
Q	<i>Chrysolexis chalcites</i>	green garden looper	Gonzalez	ALA	ti leaves	07/26	HI
Q	<i>Chrysolexis chalcites</i>	green garden looper	Gee	ALA	<i>Cordyline terminalis</i>	07/19	HI
Q	<i>Chrysolexis chalcites</i>	green garden looper	Gee	SFO	various tropicals	08/07	HI
Q	<i>Chrysolexis chalcites</i>	green garden looper	Johnson	ALA	<i>Cordyline terminalis</i>	07/12	HI
Q	<i>Chrysolexis chalcites</i>	green garden looper	Blumenthal	SMT	<i>Cordyline terminalis</i>	08/23	HI
Q	<i>Discestra</i> sp.	a cutworm	Czamecki	LAX	aircraft	07/21	WA
Q	<i>Elaphria grata</i>	a noctuid moth	Blankenship	ALA	doghause	08/09	CT
Q	<i>Epiphyas</i> sp.		Jones	LAX	papaya	06/14	HI
A	<i>Lymantria dispar</i>		Rabe	CCA	household goods	07/26	CT
A	<i>Lymantria dispar</i>		Fife	ORA	household goods	07/15	VA
A	<i>Lymantria dispar</i>		Rouhotas	ORA	household goods	07/21	NH
A	<i>Lymantria dispar</i>		Dingfelder	LAX	bicycle	07/08	MD
A	<i>Lymantria dispar</i>		Rouhotas	ORA	household goods	07/28	PA

Collector(s)	
Blumenthal	ALA
Rouhotas	ORA
Rouhotas	household goods
Rouhotas	ORA
Dingfelder	picnic bench
Rouhotas	LAX
Rouhotas	household goods
Rouhotas	ORA
Rouhotas	ladder
Rouhotas	ORA
Alavi	child's slide
Tingos	SBA
Tingos	household goods
Jones	SBA
Jones	household goods
Felder	ALA
Barnes	LAX
Jones	flower basket
Jones	SQJ
Jones	firewood
Jones	ALA
Jones	metal car ramp
Jones	SAC
Jones	ladder
Jones	LAX
Jones	household goods
Jones	ORA
Jones	doggy house
Jones	SBA
Jones	barbecue
Jones	LAX
Jones	wheelbarrow
Tanaka	CCA
Fife/Ziegler/fu	ladder
Pummer	SMT
Engstrom	household goods
Ziegler	SAC
Rouhotas	CCA
Rouhotas	household goods
Pierce	ORA
Pierce	YOL
Tanaka	household goods
Hynes	LAX
Aby	SFO
Jones	mat
Jones	ALA
Jones	doghouse
Rouhotas	ORA
Arade	household goods
Ratliff	SDG
Rouhotas	YOL
Rouhotas	child's slide
Engstrom	ORA
Jones	camping equipment
Rouhotas	SAC
Rouhotas	household goods
Rouhotas	ALA
Rouhotas	ORA
Rouhotas	household goods
Rouhotas	ORA
Rouhotas	household goods
Miller	ORA
Janssen	SAC
Janssen	picnic benches

<u>Rating</u>	<u>Species</u>	<u>Common Name</u>	<u>Date</u>	<u>Origin</u>	<u>County</u>	<u>Host</u>	<u>Collector(s)</u>
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Q	Malacosoma sp.	a tent caterpillar	07/08	MD	ORA	household goods	Rouhotas
Q	Malacosoma sp.	a tent caterpillar	07/05	NY	ORA	household goods	Rouhotas
Q	Malacosoma sp.	a tent caterpillar	06/24	PA	SDG	wagon and bicycle	Kenyon
Q	Malacosoma sp.	a tent caterpillar	08/11	PA	ORA	saw horses	Routhas
Q	Malacosoma sp.	a tent caterpillar	08/16	MI	ORA	household goods	Rouhotas
Q	Malacosoma sp.	a tent caterpillar	08/25	MD	SAC	ladder	Engstrom
Q	Orgyia leucostigma	whitemarked tussock moth	07/06	NY	SBA	household goods	Janssen
Q	Diploptera punctata	Pacific beetle cockroach	08/23	HI	LAX	automobile	Azhar
Q	Diploptera punctata	Pacific beetle cockroach	08/23	HI	LAX	automobile	Azhar
Q	Pycnoscelis surinamensis	Pacific beetle cockroach	07/12	IL	LAX	aircraft	Ogoke
Q	Dichromothrips corbetii	Surinam cockroach	08/26	HI	SMT	orchids	Czamecki
Q	Phrasterothrips sp.	a thrips	06/06	Guatemala	SDG	Tillandsia sp.	Brown
Q	Sciothrips cardamoni	a thrips	08/11	HI	SMT	Zingiber sp.	Buerer/Sandoval
Q	Selenothrips rubrocinctus	redbanded thrips	08/25	Costa Rica	SJQ	Croton sp.	Hudson
Q	Taeniothrips eucharii	a thrips	08/23	HI	SMT	Cordyline terminalis	Czarnecki
Q	Thrips orientalis	a thrips	08/26	HI	SMT	cut flowers	Buerer

Cumulative Index for the CPPDR, January, 1982 to December, 1987

The following index was compiled with much diligence by Stan Kuba. Many thanks go to Stan for his hours and days of work in completing this monumental task.

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-A NOTE FROM THE ENTOMOLOGY EDITOR-

The California Plant Pest and Disease Report (CPPDR) has been undergoing some changes. We will now include more information detailing the detection of new and exotic plant pests, and for the first time, we will report on new weed finds in the state. And in a break with the past, there will be fewer articles detailing research projects conducted in the Analysis and Identification Branch.

The Entomology Editor has been the primary force behind the continuation of the CPPDR during 1987. We intend to carry on 1988 production of the CPPDR in accordance with the original direction and purpose of this project. That purpose is to supply California Plant Pest Survey and Detection information for the Counties and other interested persons and organizations.

This issue marks the beginning of centralization of reporting pest data to the Federal Cooperative Agricultural Pest Survey (CAPS) through the Analysis and Identification Branch of CDFA. Along with this redirection of efforts comes assignment of contract funds for this purpose.

This assignment requires a high degree of coordination and cooperation with Pest Detection/Emergency Projects Branch and other branches in order to assure accuracy. Details had to be worked out and now, under this restructuring, the first CPPDR for 1988 is ready. Accordingly, this issue covers data for a 10-month period. We anticipate producing a follow-up edition early in 1989.

The restructuring of pest data efforts has enabled me to hire an assistant to aid in compiling the CAPS survey/detection information and to perform other tasks necessary for production of the CPPDR.

As in the past, county personnel, Agricultural Extension and other persons are encouraged to contribute articles and story ideas for future issues of the CPPDR. Also, any suggestions or ideas for improving the CPPDR would be greatly appreciated.
